The Builder.

No. CCCI.

SATURDAY, NOVEMBER 11, 1848.

FOR some years past we have continued to point out the absurdity of building houses *as if to burn* (as is still the case),—houses so arranged that, if once on fire, there is little chance of staying the progress of combustion — houses, with hollow timber partitions, open from the top to the bottom, formed so as to introduce the flames, in the readiest possible way, to the joists and floor boards of each story and the timbers of the roof; and with staircases a mere bundle of sticks piled up from story to story, to make failure on the part of the partitions impossible. As we said, however, in an article on the subject at the beginning of the year 1845,* "the *application* of advice and moral precepts seems little regarded; 'thou art the man' must be whispered in our ears many times before we see the personal value of the lesson. That a similar event to that of which we have deplored the consequences in the family of another may happen to us, seldom enters our mind, or leads us to adopt preventive measures." The outlay for the latter is certain, though small; the danger, though great, is supposed to be doubtful, and the majority are willing to depend on the doubt.

In the volume from which we have quoted will be found a number of articles on the subject, urging the importance of rendering houses fire-proof as far as possible; rehearsing some of the principal plans which have at different times been proposed, and recording various suggestions forwarded to us by correspondents. It is to be regretted, that up to this time little or no improvement has taken place; repetition of the demand for proper precautions in the construction of buildings to prevent fire,—the neglect of which, indeed, amounts to positive *sin*,—continues therefore to be needful; but we venture to think arrangements are dawning which will conduce to a profitable change.

In the latter part of the last century Lord Stanhope (then Lord Mahon) proposed a plan to prevent fire, the main point in which was, filling the intervals between the joists that support the floor, with a rough plaster, laid on short pieces of lath, placed close together in a contrary direction to the joists,—in other words, "pugging" the floor, but with more care and completeness than is now usually done, with the intention only of preventing the passage of sound. Omitting mention of various unimportant projects, Mons. Louis Leconte, in 1841, with the same object in view, suggested an entire change in the mode of building, and obtained a patent for his plan. He proposed the use of frames, formed of cast-iron plates, set one upon another, in a substantial manner, to obtain the required height, and filled in with *concrete*. The main beams and cross beams of floor and roofs were to be of cast-iron, or iron and wood, having in the intervals between the beams iron rods, running in various directions, and supporting a metallic wire-work, as a foundation for the ceiling.

Others have proposed coating the underside of the joists with a mixture of alum, blacklead, clay, and lime, and covering them above with tiles, carefully jointed and bedded all round into the plastering of the walls,—contending, and with justice, that such a floor would long resist the action of flames.

Our esteemed friend, Mr. Loudon, whose memory we hold in sincere respect, saw clearly, what must be apparent to all who have thought upon the matter, that the two main points for consideration are to have incombustible staircases, and to avoid having any hollow partitions or floors.* He suggested, that when the partition could not be made entirely of brick, or brick-nogging, the interstices might be filled up with mortar prepared of clay, with a small proportion of lime. The same material, he said, might be filled in between the joists, and where it was desired to render the roof fire-proof, the rafters might be made of iron, or the space between wooden rafters might be filled in with this mortar. To render houses already built comparatively fire-proof, he suggested that all the interstices in the floors, partitions, and roofs might be filled in with an earthy powder, consisting of clay or loam mixed with a small proportion of Roman cement. That this should be injected by some description of pump or bellows which, while it forced in the powder, would permit the escape of air; and, while this was going on, that steam should be injected at the same time, so as to mix with the powder and be condensed by it; by which means the whole mass would be solidified with a minimum of moisture. "In short," says he again, "in rendering houses fire-proof, the next important object to using fire-proof materials is, that of having all the walls and partitions, and even the steps of wooden staircases, filled in with such materials as will render them in effect solid."

On examining into the causes of the rapidity of the spread of the flames in London houses when on fire, it will almost invariably be found, that, whatever may have occasioned the fire to break out, the rapidity of its progress has been in proportion to the greater or less extent of the lath and plaster partitions, the hollow wooden floors, and the wooden staircases. Were the occupiers of houses sufficiently aware of the danger from lath and plaster partitions, especially when they enclose staircases, they would never occupy such houses, or if they did, they would not give such rents for them, as they would for houses with bricknogging partitions.

Mr. Loudon goes on to say,—"Any building might be rendered completely fire-proof by avoiding the use of timber in everything except fittings-up and finishing. The floors might be formed of flat tiles and cement, and covered with ornamental tiles; or flooring may be made of composition, and polished in imitation of scagliola or artificial marble. The roofs might be made flat, and covered in a manner already described; and the outer walls might be tied together in all directions by wrought-iron rods made fast to stone bond as broad as the wall is thick,—the stone cramped or dovetailed together, and carried completely around the walls about the level of the centre of each floor. The netting or lattice-work of iron rods connected with this chain of stone bond, being thickly embedded in cement, and cased with strata of flat tiles, would be kept from extremes of temperature throughout the year,—so that the difference in their contraction and expansion, during summer and winter, would be of no practical importance. Every floor of a house thus formed would be, in effect, a single flag-stone; and as the iron rods would be prevented from oxidizing, it would probably last for ages. It is easy to conceive the skeleton of an entire house thus constructed,—the perpendicular supports being brick or stone piers, 3, 4, or 6 feet apart; the horizontal bond on these supports, of flag-stone of the width of the intended thickness of the wall or partitions; and all the horizontal floors or vertical panels of iron rods and wires, covered on one or both sides with plain tiles coated with cement. Even the staircases might be so constructed and covered."

In the beginning of 1845, Lieut. Higginson took out a patent for a system of construction wherein iron was substituted for wood. The system was this:—The joists of cast or rolled iron, T shaped, had at each end of any required length a dovetail projection, all of one size, fitting into flanched mortices on the iron girders and bonding sockets. The iron girders, of proportionate strength, were likewise ⊥ shaped, but reversed, having flanched dovetail mortices cast on each side of them, 1 foot or 18 inches apart, as necessary to receive the dovetail ends of the joists. The iron bonding sockets were of the size and shape of a brick, cut off angularly before, cone shaped, cast hollow; in the shorter side having a like dovetail mortice, to receive the joists. The short iron trimmer joists compassed the chimneys in the usual manner, fitting by dovetail ends into mortices cast on the principal trimmer, at one end, and into the bonding sockets built into the house wall beside the chimneys, at the other. The usual arch in support of the hearth being provided for by iron bearing-pieces, fitting in mortices between the short trimmer joists, with an iron plate to uphold the bed of mortar under the hearth-stone. The wells, or openings for staircases, were formed by iron trimmers, cast with dovetail mortices on them, to receive the joists. Additional means of support were to be provided, when requisite, by iron pillars, with a screw in the centre of the lower end, fitting into a screw socket, drilled into the trimmer beneath,—a tenon, or projecting piece, at the upper end of the pillar, entering a recess cast or drilled to receive it, in the trimmer of the floor above. Bressummers for shop fronts, gateways, or other purposes, were to be cast with the mortices for the joists inside, and trussing spans, to support great weights of superstructure, were likewise, when requisite, to be annexed.*

The inventor, however, got into difficulties, and the patent has not been worked.

Mr. Hosking, in his very useful "Guide to the proper Regulation of Buildings in Towns,"† has a chapter on the means of rendering buildings free from liability to take fire and burn, wherein he dwells at some length on the points above stated by Mr. Loudon, urging the abandonment of timber partitions, the importance of fire-proof stairs, and of ceilings sufficiently sound to defend the timbers from the flames. "Our in-door plastering upon laths is, for the most part, of the most fragile kind, and the slightest weight falling upon the back of a ceiling will too often make a breach through it; whilst our floors are commonly of deal laid upon fir joists, and are exposed to the action of fire from below, directly the lathed and plastered ceiling

* Vol. III. p. 265.

* "Encyclopædia of Cottage and Villa Architecture," p. 966.

* A fuller account of the system will be found in our third volume, p. 77.

† Murray, Albemarle-street.

has failed; if, indeed, the enemy be not led up, and introduced to, the joists under the flooring boards by the hollow lathed and plastered quartering partitions. In the timber enclosures and partitions which economy induces the Paris builder to introduce as substitutes for walls, the timber is so embedded in, and made part of a solid concrete, as to be protected from almost every casualty of which it is susceptible, and the building is insured against almost every possible chance of danger from its failure."

The mode adopted in France of forming partitions of stone rubble and plaster, and of constructing their ceilings, as described by Mr. Hosking, we quoted in our notice of the "Guide," and may be referred to by such of our readers as do not possess the book,—although they will do better by at once obtaining it.

In the second section of the same chapter Mr. Hosking, after speaking of the common practice of forming fire-proof floors by the use of cast-iron girders and flat arches in brickwork turned between them, describes a mode of forming a floor proof against fire, without the sacrifice of height entailed by the use of arches, or the fear of their thrust, which requires to be restrained by wrought iron tie rods. He says,—

"Let the binders be made of the full depth of the girders, opening them between the top and bottom flanges, not to waste metal. Form an open floor of slight cast-iron batten-like bars about three inches wide and three-eighths of an inch thick, and having their ends turned up and out to form a shoulder and a bearing lip, by which the bars may rest upon the lower flanges of the binders, and bring their own under-faces slightly below the level of the soffits of the girders and binders, and laid fully their own width apart. Raise a boarded table or platform, like a large mortar-board, up nearly to the under side of this open iron floor, and give it temporary support, adjusting its upper face at an inch and a quarter, or thereabouts, below the soffits of the girders and binders, and about an inch clear from the under-sides of the bar-battens, having first strewed a little dry sand over the surface of the board to prevent mortar from sticking to it, as a brickmaker does to his mould in moulding bricks. Then fill in from above to a thickness of not less than three inches from the top of the board with mortar, gauged with plaster so that it may set without waste of time. The mortar should be made to pass in under the whole of the ironwork—girders, binders, and bar-battens—and to cover these last and the flanges of the girders and binders to the same depth as the surface of the board is below their soffits, and so indeed as to form one uninterrupted slab of about three inches in thickness to the extent in area of the board of plaster-composition as a ceiling to the story below, hung up to the girders and binders by the open iron bar-battens which are incorporated with the slab of plaster-composition by the process."

The floor above is to be made of plain tiles, laid in two, three, or four thicknesses, having reference to the bearing from binder to binder.

Now, the last patent that has been taken out, having for its object to give security to buildings from the effects of fire, known as "Dr. Fox's fire-proof patent," and which is being carried out by Messrs. Fox and Barrett, is for a similar combination of materials as that described by Mr. Hosking, but differently arrranged, and owing nothing to that suggestion (it is right to say), Dr. Fox having applied his system fifteen years ago in the construction of an extensive lunatic asylum known as "Northwoods," near Bristol. The system may be thus described. Small cast-iron joists are used of the ⊥ shape reversed, larger in the centre than at the ends, having 6 inches bearing on the walls, and placed 18 inches apart for floors, and 22 inches apart for roofs. In the spaces between the joists, and resting on the bottom flange of the joists are placed in a contrary direction to the way in which the joists lie, strips of wood about an inch-and-a-half square and half-an-inch apart, serving at once as the ordinary ceiling laths, and to carry the floor which is formed as follows:—A coat of rough mortar, about one inch thick above the laths, is laid on the top of these, of such a consistence that it may be pressed through the interstices and form a key for the ceiling underneath, which is afterwards laid on in the ordinary manner. Upon this first coat of mortar is laid a coat of pugging formed of road scrapings or refuse rubbish from the building, mixed with an eighth or tenth part of lime and passed through a pug mill.* This is laid in, the whole depth of the joists, as a solid foundation to receive either a facing of lime and sand in certain proportions, coated with linseed oil, or a flooring of wood or stone. It thus forms a solid mass perfectly fire-proof, and, according to the calculations of the patentees, *the cost does not exceed that of the ordinary mode of construction with timber.* For roofs indeed, they assert that it is considerably cheaper than the common plan. Moreover, the expense of insurance is avoided, as well as injury from dry rot; and protection from vermin and insects is obtained.

In order to afford precise data, we will give the dimensions of the iron joists used in two of the rooms at "Northwoods," put up fifteen years ago. In one, where the bearing is 18 feet the joists are 3 inches deep at each end, increasing to 5½ inches in the middle, and tapering from ¾ to ⅝ of an inch at top in thickness. The bottom flange is 2½ inches wide and ⅝ths of an inch thick, included in the depth already given of the joist. The average weight of iron is 15½ lbs. per foot. In another room, where the bearing is 10 feet, the depth of the joist is 2½ inches at each end, and 3¼ inches in the centre; the thickness ⅝ths to ½ an inch. The width of the flange is 1¾ inch, and its depth ¾ inch. And the average weight of iron 8¾ lbs. per foot.

We have not seen "Northwoods," but with a curious coincidence, only a few days ago, we received a communication from Mr. J. C. Christopher, one of the Metropolitan District Surveyors, testifying to the success of the system in this building, which he had accidentally visited. He says there is not a crack in any of the ceilings, that the house is warm and dry, and that the only repairs ever needed are performed *by the gardener*. The walls are not thicker than for an ordinary construction.

A large landing has recently been formed by this mode at the Middlesex Hospital, and we understand that it is to be employed to a considerable extent in the new Lunatic Asylum which is being erected for the same county, at Colney Hatch.

It is scarcely necessary now to insist on the dangerous consequences of making use of cast-iron beams of wide span, without intermediate supports, unless the beams are very large or protected from the effect of the flames should fire occur. When suddenly cooled with water the beams snap, and columns of the same material are liable to yield as well as break under the same circumstances. Under the system to which we have been referring, there would be little fear in this respect; for large spans, however, the patentees do not seem yet to have arranged their plans.

With reference to the use of iron for girders, we may mention, that Messrs. Mare and Co., the builders of the tubular bridge over the Menai Straits, are now making *wrought-iron* box girders and beams, which are likely to be found useful. For spans of 50 or 60 feet, to which extent these box girders are being applied, cast-iron could scarcely be trusted.

Again and again we protest against the absurdity of constructing buildings as if for the express purpose of readily burning, and urge, on the other hand, the importance of adopting every practicable precaution to render them fire-proof, and the sin against society which the neglect of these precautions involves.

GEORGE GODWIN.

* Where lime is readily procured, the refuse lime and ashes from the kiln may be substituted with advantage, forming a species of concrete.

THE ELECTRIC LIGHT.

WHEN we mentioned Messrs. Staite and Petrie's electrical light three weeks ago, on the report of others, and what the patentees proposed to effect by it, we remarked that if they could thus produce a *steady and sustained* light, they had accomplished what had heretofore been the preventive to the substitution of galvanism for gas. Since then we have attended a private exhibition of the invention, and heard what Mr. Staite had to say upon the subject himself. The claims made for it are of an extraordinary nature,—power of producing a light equal to that of 10,000 wax candles from one *square inch* only of illuminating surface,—perfect safety, the light not being the result of combustion,—no possibility of explosion,—a light equal to 100 wax candles for one penny per hour,—that it is self acting, and universally applicable. Of the truth of much of this, if certain difficulties are or can be overcome, there is little doubt, but we are not in a position yet to say that this is the case. We have all seen in the lecture-room the brilliant light which may be obtained by electricity,—the difficulty was to produce this permanently and economically, and that this has yet been effected, we do not think satisfactory proof was afforded at the exhibition in question. For various purposes the light was extinguished every eight or ten minutes during the evening, and there seemed to be a necessity for adjustment, and for changing the carbon at the poles of the circuit, of which nothing was said in the inventor's address. We do not raise this doubt in a captious spirit, or with any desire to underrate the invention: when all that is asserted in this case can be effected, an immense advance will have been made in the science of lighting—a science yet in its infancy. We fear, however, that this is scarcely a "fact accomplished" yet, and for the sake of after inventors it is desirable that the public should not be led into a contrary belief, and finding themselves hereafter disappointed, thus be induced to throw cold water on what may come next. The invention is a very important one, and we shall be glad when we can record our conviction that Messrs. Staite and Petrie have overcome all difficulties.

Had other journals been less unanimous, we might have been less reserved.

SANITARY PROGRESS.—East Cowes is likely to have the benefit of the Health Act, and the inhabitants are therefore looking forward to the establishment not only of a proper system of sewerage, but of water and gas, street repair, &c., all under their own control. ——A committee has been formed at Abergavenny for carrying out the provisions of the Health Act.——Fire-engines, scavengers, and other agencies are at work in Leith and Edinburgh, cleansing wynds and closes; and in every town and village in the neighbourhood, such as Newhaven, Portobello, Dalkeith, Gilmerton, the authorities are astir, and nuisances are being rooted out.——*With the conjoint liberal use of neutralizing deodorizers*, mortality and disease cannot but be thus vastly diminished, even in spite of cholera.

THE THRALDOM OF MODERN ART.

SIR,—As your correspondent "Amateur" still remains unconvinced that the study and purchase of old paintings and sculptures are prejudicial to progress, we attempt finally to put our arguments into as concise a form as possible, hoping, should they be just, to prompt a resolve in the minds of some of your numerous readers to discourage by all means in their power a taste based on no criterion but habit, and an expenditure of wealth at once unwise and unjust.

The artist and the public are overawed by the spectral monster of antiquity which has been evoked. Is the present race a race of pigmies? have men over the space of two or three thousand years shrunk in stature? has the intellect become feeble? Modern science gloriously refutes such notions: what was the strength of Hercules and all the Grecian athletæ, compared with the gigantic powers of modern times, which wrestle with the storm? or the mysteries of the Pythagoreans, compared with the simple truths by which the mariner traverses the desert of waters? In the arts alone, let it be said with shame, have modern times cringed like cowards to antiquity.

The question that deserves the most earnest consideration is this—What criterion have we that the highest excellence has been attained in Greek and Italian art? The unqualified approbation of successive ages since their production is no positive evidence, for numerous fallacies have passed current through generations, exploding at length under the influence of those minds which accept nothing as golden truth till carefully assayed in the furnace of the understanding:—such intellects cannot rest satisfied till the premises have been diligently examined, on which their opinions are based. It may at first excite wonder that fallacies should remain so long unchallenged, unrefuted,—yet surprise abates when we reflect on the powers which education and habit have to aid and perpetuate almost any absurdity to the prejudice of reason, and of common sense. Consider what the system of education has been, and even now too often is—the communication of results rather than reasons, teaching the scholar merely to assert opinions, without giving him at the same time any criterion by which to test their truth: it is, in fact, only knowledge on "hear-say." If there is any one department of education in which this bad system prevails more than another, it is in art. Ancient examples are abundantly placed before the artist and the public; they are exhorted to believe in them; vision receives them as assertions of grandeur, beauty, and perfection; a rational perception of the truth or falsehood of the assertions is not possessed by the master, much less by the scholar, least of all by the public, which obtains its notions indirectly. With all, the admiration of ancient art is more the admiration of habit and fashion than of appreciation: when a clear and rational perception is possessed that it is not the *neplus ultra*, then will it be rivalled, for every artist must have felt that it is not difficult to execute when his aim and knowledge are precise; it is not so difficult to do as to know what to do: to know what to do is the experience which is most valuable, and it is precisely on this point that the relics of ancient art are dumb. We cannot see nature with other eyes than our own: if the spectacles of the old masters be placed before healthy eyes vision will be impaired; their constant use at last compelled. To possess the experience of others is doubtless a great boon; this can be acquired in two ways,—by oral tradition or written precept: the former is more to be desired, for books cannot answer all interrogations: there is, however, an experience self-earned more valuable than either. Phidias had a greater than Phidias to instruct him.

It may be urged by some, that the criterion of judgment is innate and spontaneous, but this is contradicted by our every-day experience. Men have to be accustomed, drilled into the admiration of ancient art. We are told that old pictures, old sculpture, old architecture, ought to be placed before the public till it be impossible to avoid them: it is said by these means it will be taught to appreciate; this we doubt: it will conform to surrounding influences, to which it will become accustomed by habit. This would equally be the result if Hindoo, Egyptian, or Chinese were substituted for Greek and mediæval art.

If there is any authority on which the public might be tempted to rely, from which it might be induced to take its opinions on trust more than any other, it would be the artist. He is, however, under the control of the same law of habit which reconciles nature to that which at first appears repugnant and totally foreign to it.

Italian art is not so far removed from the present age, but that the painter may, by the dint of study, force himself to mock the condition of mind of which it was the offspring. Still, this condition of mind is but an imitation, and the result of working under such influence—this assumed condition—is worse than imitation. The faith of the nineteenth is very different from the fourteenth and fifteenth centuries: we speak especially of England. It is far more difficult, however, if not impossible, for the artist, at this distance of time, to assimilate with Greek feeling, Greek habits of thought. He acknowledges Grecian art to be still a mystery, yet he blindly worships it, and continually exhorts others to do the same. It must be evident, then, that he will never be able to work in the same vein until it ceases to be mysterious; never will he be certain of its excellence till he possesses some other criterion than itself, whereby he may decide whether the tendency of Greek art is worthy of pursuit.

The more immediate evil of expending money on the productions of a past age is this, that it limits the purchase of modern works. If the sum of fifty or sixty thousand pounds,* disbursed for this purpose, had been spent in commissioning artists, partly in instructing the public on the principles of art, can there be a doubt in any mind as to which would have been the most effective in its results, as regards the promotion of taste and development of the painter, sculptor, and architect? If thirty artists are brought into the field of competition, there is the probability in favour of more talent being compassed in that thirty than in the ten or twenty which existed previously; and an increased demand would certainly have the tendency to increase the number of the profession.

In conclusion, we would urge our fellow students to doubt all their opinions, to dissolve the covenant which they have entered into with prejudice to protect them; leave opinion alone to stand or fall in the contest with reason,—if strong, it will be stronger in victory; if weak, it will die conquered, and will soon be forgotten.

W. C. THOMAS.

FALL OF A SUGAR-HOUSE IN GLASGOW.

THE cause of the failure of the sugar-store between Alston-street and Hope-street, Glasgow, by which at least thirteen men have lost their lives and many have been injured, seems still a matter of great doubt. As nearly as we can ascertain, the sugar-house must have been about forty-five years old. About thirteen years ago a builder was employed by the proprietor to support the joisting and beams, as they had shewn symptoms of giving way. The property was then secured by means of red pine pillars, taken up alongside the original supports, and on these, beams were thrown across, upon which the floors rested. The sugar-house remained in this state till about the year 1843, when, whether from an extension of business, requiring additional weight to be placed upon the floors, or whether from the decay of the timbers (which in such premises may be rendered less durable by the extreme heat employed in the manufacture), it was considered necessary to renew the principal part of the carpenter's work in the building. At that time the whole interior part of the building was taken out, when new beams and joisting, supported by strong iron pillars, were fitted up. In fact, the greater part of the building, with the exception of the four external walls, was renewed.

The Lord Provost has stated that there is no truth in the report that the building had been condemned eight years ago: on the contrary, he believed the proprietors, up to Saturday night, were under the impression that the building was in a more secure state than what it had been in for a long time previous. He also stated that the weight in the house was, he understood, much less than usual—about 50 tons, he believed; and so confident were the proprietors of the safety of their premises, that they were in the process, should the business have gone on as usual, of taking in a great many tons additional.

We have instituted a private inquiry into the matter, with the hope of obtaining for our readers some useful information.

* We believe we are considerably under-estimating the total amount of sales of old pictures this year.

THE ARCHITECTURAL MONUMENTS OF INDIA.

IT is much to be desired that a faithful account of the architectural monuments of India should be obtained. Such things have been little cared for or thought of there, but we have indications that a better feeling is growing up. The *Delhi Gazette*, in the course of an article on the subject, mentions as one instance of this, that the paper on the "Ancient Buddhist Architecture of India," read by Mr. James Fergusson, before the Institute of Architects, last session, has been reprinted from our pages, in the Indian *Pic-nic Magazine*.

The Archæological Society of Delhi have recently passed the following resolution:—

"That a recommendation be submitted to the Government of India, to add to the survey of the district of Delhi, about to be instituted, a commission, to consist of a competent archæologist, and a draughtsman of acknowledged acquirements, to examine the whole of the ancient buildings, sites, inscriptions, &c., at present in existence in the southern pergunnah of Delhi; and that, if the results of the labours of the commission be such as to warrant their extension, other parts of the Upper Provinces be examined in a similar manner."

The *Delhi Gazette* observes upon this:—

"While Rajpootana has its Tod, Guzrat its Wathen, while Cunningham, Ellis, and others have described the ruins of Malwa, Bundelkund, &c., and even distant Affghanistan has been ransacked of its antiquarian stores by H. H. Wilson and another Cunningham still more indefatigable, Delhi, that should have been the first to attract attention, has remained almost a blank, and the exquisite and singular specimens of its architecture, its several Hindoo and numerous Mahomedan monuments, its inscriptions, &c., are all but unknown, in the antiquarian sense of the word, though they have for many years been objects of wonder to the traveller in search of the curious; but even he can only see and admire them frequently, without knowing what they really are. It is still a matter of dispute with some even at Delhi, and with cotemporary writers, whether the Kootub Meenar is a Mahomedan or Hindoo structure; the sites of the fourteen or fifteen towns of Delhi, Seeree, Kelokeree, Jehanpunnah, Feerozabad, Togluk-abad, Mahomdabad, &c. &c., that have followed each other in such rapid succession, are, with one or two exceptions, almost wholly unexplored; the numerous tombs of the great men who figured in the annals of by-gone years, are seen without our knowing precisely whose memory they are really intended to commemorate, and the splendid works, planned to fertilize the surrounding country, and defend its salient points, are as a sealed book, merely because we have not taken the trouble to open it as we might have done long since."

"We have already deeply to lament, in the past archæological history of India, the irretrievable loss of many objects of very great antiquarian interest, that have been allowed to perish entirely, or to deteriorate so much as to be hardly available for the purposes of the minute researches now proposed. We may here take the opportunity of alluding in particular to those splendid architectural remains around the Kootub Meenar, which, had they formerly received that attention they were so justly entitled to, would not now be in a state verging on absolute ruin, and of adding that, if nothing be done to preserve at least the memory of those that still exist, they, too, will disappear from the scene of their grandeur, without a record of their existence beyond the passing, and very frequently fanciful, sketches that the curiosity or admiration of travellers have induced them to commit hastily to paper.

Other important architectural monuments have also been allowed to decay, and no useful record of them has been kept; while many valuable works of art have been broken up for the materials of which they are composed (we allude particularly to what we cannot but call the barbarisms of the utilitarian Lord W. Bentinck, at Agra), and coins and other articles of gold and silver that might, if preserved, have proved of inestimable value, have been thrown into the melting-pot, unnoticed and undescribed."

The known liberality of the Hon. the Court of Directors, and the fact that the Madras Government have, under their orders, deputed a qualified officer to examine the Cave Temples of the Dekkan, induce a hope that the Supreme Government will not receive with indifference the appeal the society have resolved on making. We would suggest that the two London Archæological Societies might aid in obtaining what the Delhi society very properly ask, by addressing a brief memorial to the Indian Government.

THE IMPROVEMENT OF LONDON.

Sir,—So little has been heard of late about the improvements of the British metropolis, that it seems as if they were destined to follow the fate of our commerce, trade, and railways, in a similar impolitic and panic-struck suspension. Speculation has been put down, and with it the most legitimate commerce, and yet there is plenty of wealth in England for all purposes; so that if the monied classes would rouse the sleepy faculties of their patriotism, the most noble plans of improvement might be carried out, and full employment afforded the people. With your permission I would beg to suggest, through the medium of "The Builder," an improvement in one of our principal streets, and the opening of a new thoroughfare in another quarter of the town.

The first relates to Pall Mall. I hear it is reported that Mr. Pennethorne recommends the erection of a new National Gallery on the site of Cleveland-row, St. James's, and to raise the present building in Trafalgar-square a story, and make it fit for what it was originally intended, viz., the *atélier* of the Royal Academy of Painting. I do not pretend to be a competent judge of the eligibility of the proposed site for a National Gallery, but should the plan be adopted by Government, what I wish to recommend is, that the front of the new building should be set back so as to stand in a line with the north side of Pall Mall (which is really a fine-looking street with a very ill-looking western termination), and then make an opening into the Green-park, and remove the marble arch from Buckingham Palace to that site, which, I humbly think, would be a very appropriate one, in more respects than one, and afford a beautiful vista down the whole length of Pall Mall.

My second relates to the opening of a new thoroughfare, by forming a wide carriage-road in a straight line from near the west end of Old-street to the east end of Theobald's-road, *viâ* Liquorpond-street, the two termini of which, you will find on reference to a map of London, are exactly in a line. Should this plan involve the necessity of a viaduct over the valley, to which I can see no objection, two brick arches, at moderate cost, would be sufficient, and the rest of the hollow on each side might be filled up with earth. Much of the picturesqueness of Edinburgh is owing to its numerous viaducts.

No one can imagine, who does not reside in a north-east suburb as I do, how truly useful such a carriage thoroughfare would be, how round-about a drive it would save, and what an economising of time it would effect. Many a time I have been from one to two hours getting to High Holborn, having to stem the stoppages and shocks in the defile of Cheapside, the halts and "go-on's" in Newgate-street, and the falling of horses and breaking of legs at Holborn-hill; and what is almost as bad as witnessing the sufferings of these noble animals, is the provoking loss of time which you are compelled to bear, like poor Job, while being danced this long round to Holborn, at the same time that you know that an omnibus could do the distance in half an hour well, by a straight line of road, if it existed. The property that would be required for opening this line consists, with few exceptions, of very old small houses, and there are no public buildings in the way. This new thoroughfare is urgently required by a population of many thousands spread over West Hackney, Kingsland, Stoke Newington, and Beauvoir Town, &c. It was hoped that it would have been effected by some railway company or other, several years ago; but if the Government waits for that consummation, I fear it will wait in vain, for there is not the most distant probability of such an event.

A Wiltshireman.

WANT OF HABITATIONS FOR THE WORKING CLASSES.

Sir,—The observations with which you prefaced your remarks on the "Lumsden Model Dwellings for the Working Classes," lately erected in Glasgow, are so much to the point, as regards our requirements for the people of England, that I almost deem any observations of mine superfluous, more especially when your correspondent's letter, signed "J. E. D.," is also considered. However, I trust you will permit me to make a few remarks on this all-important matter. Within the last few years much has been accomplished to remedy the sanitary condition of this metropolis and our large towns, both by the local and other authorities, yet much more remains to be done; and one of the principal considerations, next to a proper drainage, is the habitations of the middle and working classes of society. Government, by enactments and other measures, of course, can compel local boards to remedy the former, but not so the latter, which is entirely a matter of private enterprise and speculation. England, above all other nations, is proverbial for her industrious and speculative spirit, not to mention her advance in other respects; and when we come to consider her vast wealth, and the numerous ways in which it is invested in all parts of the globe, we cannot forbear exclaiming,—this is indeed a wonderful people!

But, in the midst of all this propagating industry, why is it that our monied men have hitherto never thought of investing a portion of their wealth in the erection of habitations for the working man? Surely this would be as safe a field for their capital as the Pennsylvanian funds, or the erection of splendid mansions and fancy dwellings for the noble and wealthy, which (if I may be allowed the expression) have sprung into existence within the last five years in this mighty city, and which at this moment are, I am sorry to say, but very partially inhabited. Many are still in the condition as left by the workmen, either more or less incomplete. There they stand, monuments of industry as far as regards rapidity of erection goes, but, on the other hand, sad spectacles of man's cupidity, want of foresight, and folly. The projectors, it would almost seem, were desirous that the rich man should be puzzled how to choose from amongst so many. I have no hesitation in saying, if the capital now lying dormant in empty houses had been applied in the erection of model dwellings for the middle and working classes, that the capitalist would be realising at this day a good per centage for his outlay, not to mention the unspeakable benefits he would have been conferring on his less fortunate brethren.

Perhaps, Sir, you may deem me somewhat tedious in thus adverting so fully to the man of money, but it is this individual class alone that we must look to for bettering the homes of our hard-working population: with them rests either to increase or decrease our bills of mortality. My wish, Sir, is, that they may be convinced that there is no risk attached to bringing about this happy change, for doubts on this head have hitherto been the great bugbear. I say this, not from mere theoretical deductions, but from my own personal knowledge and experience.

I have given this matter much consideration, and been induced—repeatedly induced—to call the attention of various parties to the safety of such an investment, and the great good which would arise from it: none for a moment have denied the existing necessities for such a change, but the invariable answer has been—I fear such a scheme would not pay; ground-rents are high and taxes equally so, not to mention the trouble incidental to the collecting the rents, &c. &c. Now, Sir, I think you will hold with me that this is very fallacious reasoning; the truth is (I fear) that it is one thing to project for a poor but honest man, and another for the rich, however questionable his integrity may be; I say this with all due respect, trusting not be misunderstood.

As regards the two first objects, ground-rents are certainly high in many parts of the metropolis, but plenty of sites are to be had on reasonable terms, and as the calculations are only for what the building covers, let there be a higher elevation, as in Edinburgh and Paris: to such an arrangement surely there can be no objections. Touching the taxes, of course they vary almost in every parish, but in some they are low; however, I beg to submit that even with taxes and altogether they would realize a good per centage. As to the trouble of collecting the rents, this objection requires no reply: I presume there exists no difficulty in appointing a person for that purpose if the owner or owners deem it necessary. As to the plans for such buildings, I find I have already trespassed so much that I will leave the subject for some future occasion. My present object being to draw the attention of the capitalist, which I trust, with your powerful aid, may result in much good, I feel assured, as far as you are concerned, that nothing will be wanting.

In 1844, the proprietors of the Docks and other public works at Birkenhead found it necessary to erect model dwellings for their workmen (the arrangements of which are excellent), and I believe they have answered exceedingly well; let, therefore, such as they and Mr. Lumsden do their duty in this respect, and I feel assured that associations will be formed, the shares of which will become good stock.

W. S.

THE VALUE AND POWER OF ART.

We admire true art, on account of its ennobling tendency. It has its origin in principles which, founded in the constitution of our nature, are the foundation of excellence. It would not be a difficult, though a very interesting task, from the varied and honoured labours of the artist, to shew that success demands, on his part, the exercise of the highest mental faculties. Real art proclaims, with eloquence, its intrinsic dignity. How often, for instance, do the stately monuments which her genius have reared force themselves on our regard, rivetting our attention, and commanding our admiration, even when men are intently occupied in the bustling transactions and exciting pursuits of life! When the appeals of art are so powerful, it would be idle to say anything in vindication of its character, were it not that there are creatures upon whose minds they seem to make no impression, and who rudely pass them by, or only cast upon them a look of cold indifference. To write, however, on subjects of art, is to eulogise them, and is, at the same time, to give a history of the good they have effected; but this has been from time immemorial felt and acknowledged by all persons who have a claim upon us from their keen sensibility to beauty, and their lofty elevation of intellect. To the poet they have ever afforded a congenial and favourite theme,—to the wealthy, an opportunity of gratifying their own taste in encouraging talent; nor has posterity ever forgotten those artists whose services and beautiful emanations have thrown such a glory over their vocation, but have recorded their names on the roll of fame, as benefactors to their race.

There is no reader of that remarkable poem, the "Iliad," but must remember the frequent allusions which Homer makes to the works of the skilled Sidonian artists and cunning artificers; with what warm sympathy, but, at the same time, with what propriety, he introduces descriptions of various instruments of war—royal and sacerdotal vestments, curiously woven—the shield of the hero Achilles; with works of larger construction—architectural fabrics, such as in after ages were conceived by a Palladio

or by a Sir Christopher Wren. He considers all these as growing under the superintending eye and inspiration of personified divinity—be it Minerva or Pallas;—their beauty and contrivance, and the transcendancy of their invention being referred to a superior Power, who strengthened the artists' energies. Moreover, he reminds us how the workmanship added immeasurably to the value of the material, by the superiority of mind over matter. In objects of fictile manufacture, where the finer and more delicate skill of the hands was visible, the splendid vase is praised, not because its material is costly, but because it is "figur'd with art that dignified the gold," and reflected "the image of a master-mind." We witness, in all this, a most consummate taste and judgment. So Ovid, in the opening of his glowing description of Phæton:—

"Regia Solis erat sublimibus alta columnis,
Clara micante auro, flammasque imitante pyropo;
Cujus ebur nitidum fastigia summa tegebat:
Argenti bifores radiabant luminæ valvæ.
Materiem superabat opus."

The bard of the "Iliad" says, the inventor of these elegant arts was a wise man, and that he must have acted from precepts delivered to him by Minerva. Thus:—

"The work
'Twas a wise artist fram'd, his wisdom taught
By precepts from Minerva."

F. Lush.

THE FOUR-O'CLOCK MOVEMENT.

Sir,—Observing in your valuable publication of the 28th of October a letter from Mr. Wm. Jenkins, Secretary to "The Masons of London Protection Society;" and knowing your willingness on all occasions to give publicity to any matter likely to be productive of real good to the employers and employed connected with the building business, I am induced to take the liberty of addressing a few remarks in reference to the four-o'clock movement.

I am but a young man, though during my short career have had much experience among workmen, having been engaged in works of considerable importance, and am fully convinced that "the four-o'clock movement" works badly, both for masters and men. I have generally in my employ from thirty to forty hands, and up to the present time have not been applied to by my men to adopt the four-o'clock system, which I can, in some measure, account for from their knowing my feeling in the matter, and moreover I am satisfied that affairs of this kind depend principally on the foreman of the establishment.

When the obnoxious system was first mooted, a meeting of the members of "the Builders' Society" was called together at the Freemasons' Tavern, Great Queen-street, when the gentlemen who first countenanced its adoption were present, one of whom, by the by, has, I believe, ceased to become a competing builder, and builds now only for himself. That gentleman (if I am correctly informed) stated at that meeting that he should put the deficiency caused by the mechanics striking work at four o'clock on Saturdays on the purchase of his several houses. So far so good; but pray may I ask in what way can the less favoured tradesmen of the metropolis make up for so gross an imposition on the part of the mechanic?

Is it possible, in times like the present, that a master who adopts this measure can be put fairly into competition with another who has (that which in all conscience he is justly entitled to) the full benefit of his men's labour on the Saturday as on other days? For instance, every mechanic employed in establishments where the plan, or rather privilege, is granted, receives 9d., and every labourer about 6d. over and above that for which they work—consequently a master employing one or two hundred hands, and being compelled to accede to its adoption, would fall very far short of the balance he ought to be able to shew at the end of the year. If quitting work at four o'clock on the Saturday really was, in the least, beneficial to the workman, or at all consistent with common sense or justice, I should be one of the first to promote its general adoption, but one glance at the public-houses in the immediate neighbourhood of the pay-table of builders who allow it, will soon convince an observer to the contrary.

I therefore do hope those gentlemen builders who first gave way to the demand, now they can plainly see the bad working of such a measure, will reconsider the matter, and not allow the little builders of the metropolis to be crushed by such oppression, notwithstanding they themselves are by good fortune placed beyond its lash.

A Young Builder.

PROTECTION OF PILES IN SEA-WATER, AND OF TIMBER FROM ANTS.

Sir,—In your last monthly part I perceive two letters, headed "Protection of Piles in Sea-water," and both recommendatory of iron clout nails; the last of the two, signed "W. B.," adding that timber prepared with Payne's process had effectually withstood the *torredo navalis* and the white ant of India. It would be difficult to give proof of this.

Iron clout or broad-headed nails lose their heads when rusted; and I have seen timber which had been covered with such, but which, when taken up, was quite destroyed. Copper nails are preferable, but more expensive. Some foreigners use sheet lead nailed on to piles, and wrapped close round with tarred rope, well tarred. For wharfing I have known sheet-iron fastened with zinc-headed nails resist the action of the sea-water (by tide) for ten years; whilst iron, fastened with iron, lasted only in the same situation two or three years. But my main object in addressing you is to refer to Payne's process as considered proof against the white ants.

In September, 1847, Mr. John Bourne, formerly of the East-Indian Railway, took out with him to Calcutta specimens of wood prepared according to Burnett's, to Margery's, to Bethell's, and Payne's two processes. The specimens consisted of larch, fir, birch, beech, ash, and teak, and he intended to have submitted them to the test of the white ant himself. Circumstances, however, induced him to return to England in February last, and before leaving he placed them at my disposal. I immediately went to the Howrah Dock, and deposited them in various places. Some specimens I put in the damp, and others in the dry, but all in ants'-nests. I also had others nailed on to the dock wharf to ascertain the action of the worm.

In July last (therefore only about an interval of five months) I revisited the spot, and examined the specimens. Those placed in damp situations were all more or less destroyed, some nearly eaten up, and but two sufficiently remaining to be recognised. No solution appeared to offer any superior advantage. Those placed in the dry, on the contrary, were untouched, while pieces of unprepared wood placed with them had been destroyed.

The pieces nailed on to the wharf were also undestroyed. The time, however, had been too short to enable any decided opinion to be formed; and as I was obliged to quit India in July, I left the experiments to be continued by Mr. Bremner, of the Docks. The subject is one deserving the attention of the East-India Company; and there are many experiments connected both with this subject and others which might be undertaken at but little cost, and which would prove very valuable in the event of any works (such as railway bridges, &c.) being executed. I have not troubled you with any details—but such have been properly kept. Geo. B. W. Jackson.

Maida Hill, Nov. 6, 1848.

P.S. It should also be borne in mind that the white ants of Calcutta are nothing in size to those of the upper provinces.

A Fatal Explosion has just occurred in a pit near Whitehaven, leased by the Haematite Mining Company, in consequence of the folly and rashness of one or other of the workmen, who had taken off the top of his safety-lamp to light his pipe, and thus sacrificed not only his own life but the lives of other twenty-nine, men and children, being the whole number employed in the mine, with one exception. Why not lock the lamps, and have the keys in the hands of some one responsible party?

NOTES IN THE PROVINCES.

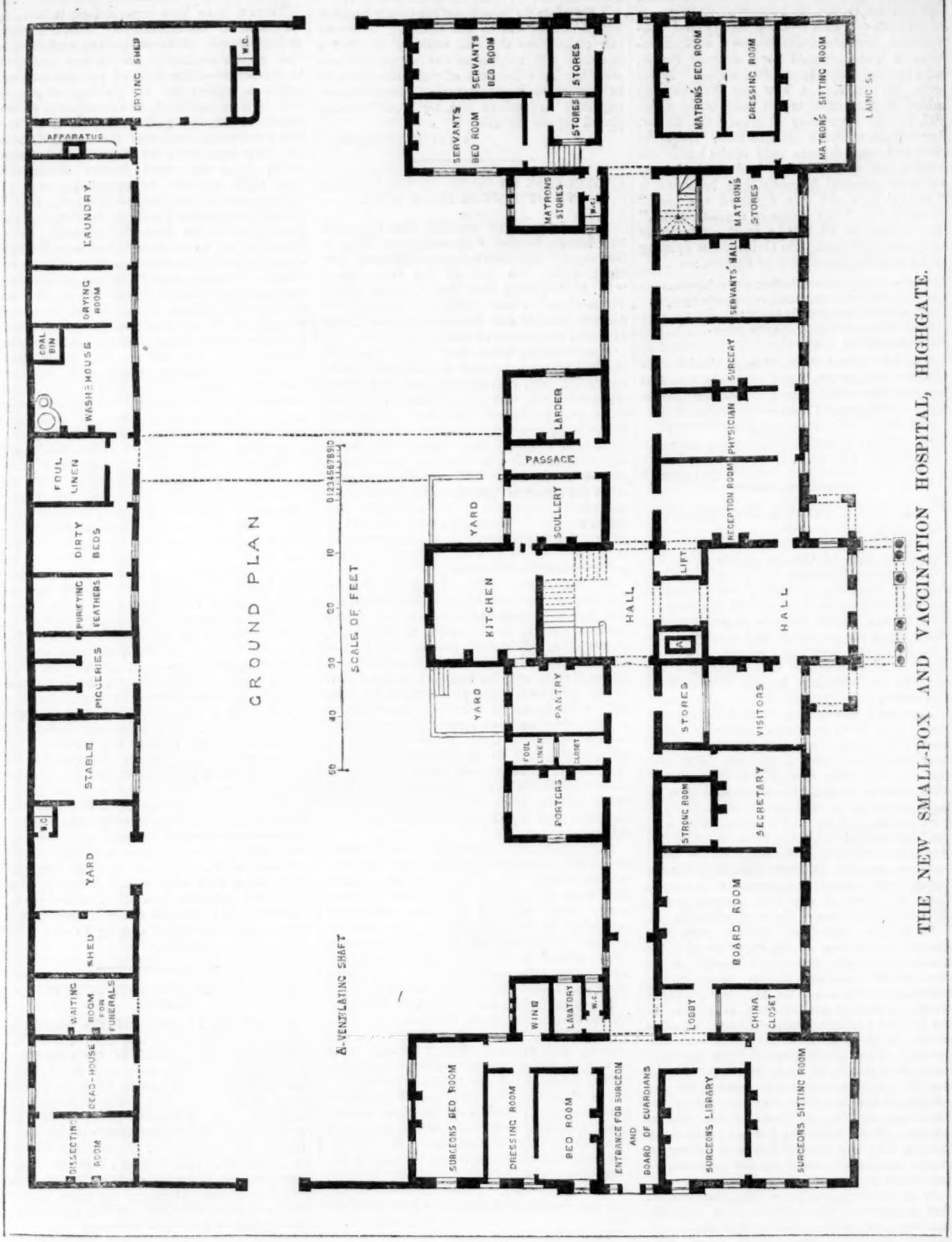
There is to be a competition, it is said, for plans for the new county lunatic asylum at Brentwood. A contemporary understands that eleven architects are already prepared to compete.——The Bedford prisons, as they progress, appear to be yielding a goodly crop of local criticism, at the expense of the architect; but we gather very little of the real substantial merits of the question from the leafy luxuriance of trees of knowledge which yield far more flowers of rhetoric than solid tangible fruits, whether ripe or unripe, sour or mellow.——H. R. H. Prince Albert has signified his intention of laying the first stone of the new Philanthropic Farm School about to be established near Barnet.——A new church of stone, from designs by Messrs. Hamilton and Saunders, of Wolverhampton, architects, is shortly to be founded at Oker-hill, Tipton.——One of the Liverpool council has "very satisfactorily shewn that, deducting 400*l.* which the late Harrington Company had charged the Paul-street bath in that town for the supply of water, that institution was self-supporting. Twenty thousand persons had bathed there gratuitously last year; and he expressed a hope that salt-water baths for a shilling each would be given to the public at the George's Pier. The baths at that place had cost 39,560*l.*, and they were now only paying an annual rent of 210*l.*, something like one-half per cent., whereas, by a different system of management, they might be made self-supporting."——Christ Church, Great Homer-street, Liverpool, was consecrated on Monday week.——The nave of Hereford Cathedral, according to the local *Times*, will shortly be refitted for the resumption of daily prayers.——The same authority states that the ancient structure at Hereford, known as the White Cross, built by Bishop Charlton, in the early part of the fifteenth century, has been carefully repaired during the past week, at least as far as regards the flight of seven steps upon which the stalk of the cross is elevated. These steps were very much worn in many places, and threatened to give way, and destroy the whole of this interesting relic of antiquity. The expense of repair has been defrayed by the Rev. Canon Lord Saye and Sele.——At a recent vestry meeting at Leominster attention was drawn to the state of the great west window of the church, which the surveyor had reported to be in a very dangerous state, and at least requiring repair estimated at 320*l.*, if not complete renewal. Plans for a new window had been made by order of a previous committee, and tenders advertised for; but the vestry determined on further inquiries before coming to any final decision on the subject.

WESTMINSTER DISTRICT SURVEYORSHIP.

An adjourned meeting of the Middlesex magistrates was held on the 20th ultimo, at Westminster, Mr. Pownall in the chair; for the purpose of electing a surveyor for the district of St. Margaret and St. John the Evangelist, Westminster, under the Metropolitan Buildings Act. Originally there were four candidates for the appointment, viz., Mr. Jas. Howell, Mr. George L. Taylor, Mr. W. F. East, and Mr. F. H. Groves; but the three latter resigned in favour of Mr. Howell, who has for some time discharged the duties of the office as the deputy of the late Mr. Pilkington, who had held it for sixty-four years.

On the motion of Mr. France, seconded by Captain Bague, Mr. Howell was unanimously elected, and was doubtless gratified by the complimentary observations which the chairman addressed to him at the close of the business.

Gutta Percha.—A correspondent at Singapore says:—"The price of gutta percha has greatly varied since my arrival here: at one time it was speculated on like opium; it was shortly after my arrival at 21 dollars to 22 dollars, it is now to be purchased from 9 dollars to 10 dollars per picul of 133⅓ pounds. They make wash-hand basins and water jugs of it here, also buckets, riding whips, &c.: it is an excellent material for ships' use, it not being breakable."



THE NEW SMALL-POX AND VACCINATION HOSPITAL, HIGHGATE.

SMALL-POX AND VACCINATION HOSPITAL.*

ABOVE we now give the ground plan of the new Small-pox Hospital, an external view of which appeared in our last number. The arrangements will be found to be very good, and well deserving the study of those who may contemplate designing similar structures.

The scale will serve for the plan of the one-pair story given last week.

* See p. 534, *ante*.

PROPOSED CENOTAPH IN MEMORY OF LORD GEORGE BENTINCK.

Mr. G. P. Kennedy, architect, has published a design for a cenotaph, to be erected by subscription, to the memory of Lord George Bentinck. It is in the shape of a building of considerable pretence and extent, which forms on the plan a Latin cross, the three arms at the head consisting of projecting pavilions, one story high only, to contain emblematical groups representing the agricultural, commercial, and colonial interests. The body of the building, a parallelogram at the intersection of the cross, is taken up two stories, and the central portion has a third story, crowned with a dome, beneath which is to stand a colossal statue of his lordship. The style, to use Mr. Kennedy's own words, is to be "Highly *rusticated* Italian," and the cost, including statues, is estimated at 15,000*l*. The composition is harmonious, pyramidizing nicely in all points of view, and the plan a very pretty one.

THE BASILICA OF ST. BONIFACE, MUNICH.

THE BASILICA OF ST. BONIFACE, IN MUNICH.

The basilica of St. Boniface, commenced by order of the King of Bavaria in 1835, under the direction of the architect Ziebland, is now finished. It is in the Byzantine, or Roman-Christian style of architecture, and is the result of many years' study on the part of the architect.

We are indebted to the kindness of the editor of the *Art-Journal* for the accompanying views of it, internal and external, and we obtain from his pages the following descriptive particulars:—

The height to the apex of the gable is 80 feet. The upper story has three windows in front, and nineteen on each side, and below there is a portico with three doorways in front. This portico, the eight columns of which bear nine arches, is the only ornament of the exterior, if you except the lesines and the little arches below the cornice. The whole building is of red brick-work; but the columns are of sand-stone, the capitals and bases of white marble. The design of the capitals is new, but in harmony with the later Corinthian forms of the fifth and sixth centuries. In unison with the style of the above period, and with the character of the German Basilicas, is the arrangement of the arcades above the columns; and hence we find this system pursued throughout. Four large steps lead up to the portico, and three doorways into the church, the middle of which is semicircular, while the others are rectangular. The principal doorway is adorned with two marble statues of the Apostles Peter and Paul, by Schönlaub, both well composed draped figures, standing on short and thick columns, below which two baldachins bear the semicircular arch of the doorway; producing, however, the writer says, a very bad effect. The doors are of oak, and decorated with the sculptured figures of the patriarchs and prophets.

In opposition to the very simple exterior, the interior of the church is ornate and splendid. The full length is 300 feet, the breadth 120, the height 80 feet. The whole interior is divided into five naves by sixty-four columns of grizzled marble, with capitals and bases of white marble, united by arcades; there is no transept; the pavement is ornamented by well-composed mosaic; the ceiling is not vaulted, and the rafters are visible; but all the wood and iron are decorated, painted, and gilt, and the roof itself, covered with golden stars on an azure ground, appears as the open firmament. All the walls, from top to bottom, are covered with paintings and ornaments, and yet the effect of the whole edifice is said to convey tranquillity.

The absis is decorated in fresco by H. Hess, as are the walls of the nave,—the paintings on which include illustrations of the history of the propagation of Christianity and of the life of St. Boniface.

RAILWAY JOTTINGS.

The London and North-Western, the Great Western, and the London and South-Western Companies have advertised their intention to apply to Parliament in the ensuing session for power to amalgamate, alter tolls, and amend their Acts.——An 'Observer' in the *Morning Herald* states that it has been estimated that railways have effected a saving of 12,000,000*l.* annually on the traffic of the country, although

they comprehend as yet but a fraction relatively of the whole traffic of trade. Among other items of traffic he states that of building-stone to be not one-tenth of what is requisite for even a fourth part of the surface, "and whereas stone might be brought up to the metropolis at one penny per ton per mile by the London and North-Western and Great Western Railways, little is so brought, though there is a great wish to have public buildings of stone instead of brick."——It is said that the solicitor's bill of the South-Eastern contained 10,000 folios, occupied twelve months in taxation before the master, and amounted to 240,000*l.*——Messrs. Chaloner and Fleming, of Liverpool, in alluding to the difficulties attendant on the transmission of wood goods to the interior by rail or canal, remark that, "with a fostering anxiety to promote the traffic by both rail and canal, such as exists from the *east* coast to the interior, this port would be enabled to supply an almost inexhaustible traffic by both, and, as regards the produce of America, would be as remarkable for its distribution of wood goods as it is now for cotton. Apply the same skill to the goods traffic that the passenger traffic has had shewn to it, and a continued, almost uninterrupted stream, would flow into the manufacturing districts, to be thence distributed over the network of rails that is spreading itself throughout the kingdom."——While two joiners, last week, were at work on the premises of a cabinet-maker at Hull, near the railway station, three bricklayers being at same time on the roof, repairing damage occasioned by fire, a railway tender came right through the walls, and knocked down a stack of chimneys and the east and west walls of four rooms.——It is alleged, in a compensation case lately to be tried at Shipley, that the Leeds and Bradford Railway Company, in seeking a foundation for their line across a certain portion of the Bingley bog, have forced the wet and boggy earth beneath the floor of the claimant's mill, thereby not only throwing it out of level and impairing the foundation, but making the floor so wet and damp that the machinery is injured by rust and mould, and the floor rendered unfit to stand upon, and also that the high embankment raised against the weaving-room window had shut out the light, rendering the room unavailable, except as a warehouse. The deterioration of the value of the property from these causes was estimated at 1,500*l.*——On Tuesday week, says an Edinburgh paper, "while a number of workmen were engaged on the line of railway, near New Learmouth, in erecting centres for the bridge across a deep glen, in a moment the whole of the huge framework gave way, burying beneath it five of the workmen, all of whom were very much injured. The unfortunate circumstance, according to report, is ascribed to carelessness, which we believe to be the cause of almost all the railway accidents so frequently occurring both in this and other neighbourhoods."

SALE OF THE REGENT-STREET QUADRANT COLUMNS.

At the sale on the 7th inst., the assembled company appeared to be composed of brokers and dealers chiefly; some of whom, with little respect for poor Nash, declared that the "very handsome columns" were excellently good for a workhouse, while others talked good-humouredly about chimney ornaments, or turning them into "Roman-Doric" drains, but no one seemed inclined to start in the competition for their possession. The auctioneer stated that the columns each cost thirty-five guineas,—and, beginning at ten, he gradually reduced the price to four guineas, at which bidding commenced. A few were sold to private individuals at 7*l.* 10*s.* each, but the remainder are on hand, and may doubtlessly be obtained by any who desire them. They weigh 35 cwt. 18 lbs. each.

Improvement of the Serpentine.—The *Lancet* suggests that the bottom of the Serpentine should be so filled up and covered with gravel and concrete as to shallow gradually from 12 feet in the middle, and thus the cleansing process be rendered merely a sweeping of the concrete floor or bed.

FRESCOES AND OTHER DECORATIONS IN ITALY.

At a meeting of the Decorative Art Society, held some time since, a paper by Mr. Edward Cooper was read, treating of the frescoes and mosaics inspected by him during a recent journey through Italy.

The introduction embraced a review of some researches in the history of art, as disproving the supposed invention of painting, and its revival by Cimabue, as claimed for him by Vasari and other writers. This was followed by comments upon the productions of certain Greek and Roman artists antecedent to the Christian era, and then those of mediæval artists down to works of the fifteenth and sixteenth centuries. The remarks had reference to those frescoes only which the writer had the opportunity of inspecting, and their tenour had been regulated simply by his first impressions, and noted at that time. A fresco called the "Nozze Aldrobrandini," now in the Vatican, representing the marriage of Peleus and Thetis, in size about 6 feet long and 3 feet high, and found in the year 1606, in some ruins formerly belonging to the golden house of Nero, was described as particularly worthy of attention; a pure Greek feeling, it was remarked, pervades this work—a view supported by the elegance of the distribution and attitudes of the figures, and the perfect drawing and colouring throughout. The colours for the most part were said to be secondary, and of light tints, so as to bear a resemblance in character to a water-colour sketch. N. Poussin, who copied this work in oil, it was said lost much of the beauty and simplicity, by filling in the back ground with deep colours, whereas, in the fresco, the figures were painted upon the lime. The picture is in the Corsini Palace, at Rome. The decorative works from Pompeii, Herculaneum, the baths of Titus, and others preserved in the Vatican, were then alluded to, some as displaying considerable merit in their execution. They consist chiefly of small fanciful figures, which have been placed as centres to panels, &c., but it was added that the decorative paintings from Pompeii are mostly of but second rate ability. The mosaics by the Romans were adverted to, for the purpose of introducing a parallel whereby the state of the arts might be thus regarded. That found in the house of the Faun, at Pompeii, which measures about 24 feet by 14 feet, exhibits a representation of the battle between Alexander the Great and Darius, King of Persia, and is composed of small irregular fragments of marble of about $\frac{1}{16}$ inch in size, the colouring being good, the drawing and foreshortening spirited, the horses full of fire, and establishing a proof of great artistic powers of expression at the commencement of the Christian era. The decline of Roman power and influence being accompanied by a decadence of art, as shewn in the curious mosaics in the crypt of St. Peter's at Rome, it was contended that the arts were probably practised for the most part by Byzantine artists until the time of Cimabue. The frescoes of the Campo Santo were referred to as among the most interesting of any now to be found in Italy; the oldest having been executed towards the close of the thirteenth century, and the others at intervals during the two following centuries. These present in themselves a fair page of history, shewing the progress of the arts. Giotto Andrea, Orcagna, Taddeo Gaddi, and others have been employed upon some of them. It was remarked that the subjects are scriptural; the scenes, however, have been laid in Pisa, or its neighbourhood, and the costumes and personages are transcripts from those existing at the time the works were completed. In reflecting upon this period, which immediately preceded the productions of these great masters of the fifteenth and sixteenth centuries, the writer said he felt more fully the difficulty of drawing the line between high and decorative art, and he remarked that if the paintings in the loggie of the Vatican, and numerous similar works, should be classed as decorative art, still, in these instances, the human figure will be found drawn in every possible attitude, with the greatest artistic ability, while the works of Michelangelo in the Sistine Chapel are claimed by others as belonging to high art. He was therefore inclined to consider all art that tends to the ornamentation of an edifice, as decorative art, whether produced by Michelangelo, Raffaelle, Cellini, or any other great genius that could be mentioned. The works in the Sistine Chapel were then described. The building was commenced by Pope Sixtus the 4th, A.D. 1473; and Signorelli, Cosimo Roselli, Perugino, and Ghirlandajo each contributed to the decoration of the upper portion of the walls. In 1508, Michelangelo proceeded to decorate the enormous vaulted ceiling, 150 feet in length and 50 feet in breadth, with upwards of 200 figures, representing the fall and redemption of man: the details of the subjects were described at length. They were said to have been executed by Michelangelo in twenty months; and the Last Judgment, subsequently finished, is an immense work, occupying the whole of the east end of the chapel. In these productions Michelangelo has displayed the most wonderful skill in drawing the human figure, and representing it under every variety of foreshortening and position.

The "Last Judgment" the writer however contended, is deficient in elegance, and somewhat feeble in sentiment, and he considered it to be chiefly remarkable for the great ability shewn in depicting the human figure under every conceivable contortion.

Mr. Cooper then referred to, and described the frescoes in the camera of the Vatican, by Raffaelle, as especially enchanting from the harmony of colour and composition which pervades them throughout. Raffaelle was employed ten years in painting these, and a difference in quality between the first and last composition became evident on careful examination. The later work, it was stated, shews that he had then caught a *little* of the vigour of Michelangelo, such as is more particularly evinced in the fresco representing the "Fire in the Borgia." The frescoes in the loggia, or corridor, being next in point of time of execution, were next noticed. The subjects are scriptural, and generally known as Raffaelle's bible. It was remarked that the arabesque and other ornamental portions were probably painted by pupils, each designing the compartment upon which he had been employed.

Many of them are very beautiful inventions, whilst others display a comparative paucity of design, thus supporting this view. The writer added that his preconceived opinion that Raffaelle had derived much of this style of composition from seeing the Roman decorations of the baths of Titus was strengthened on inspection, and he felt that, amidst the vast variety of design and fancy, shown in the camera, and also in the loggia, there is a want of harmony in the general effect, and also of unity of purpose. He then referred to many incongruities in the choice of subject, and in the size of objects there brought together, and maintained that such peculiarities are less obvious in the works of the ancients, as well as that they are avoided, in a great measure, in subsequent works, by Raffaelle's pupils. The terms Arabesque and Raffaellesque having been freely used in his remarks, he observed, that the former is misapplied, in as far as its strict meaning is concerned; for it would appear that the Arab, never had adopted this kind of decoration. The Italians term this style Grotesques from the place or subterraneous caves, in which the examples were found that led to its revival.

Reference was then made to palaces in Genoa, which are all more or less decorated with paintings within and without. The architecture being of a picturesque and florid Roman character, the details, and the manner in which they are treated, formed matter for description. One method alluded to as effective, and very durable, consisted in the etching or scratching away the upper surface of lime, and displaying beneath a lime of a brown or darker colour than that on the surface. The entrance-halls, he said, have usually ceilings painted with historical subjects, and Raffaellesque enrichments, which are often continued through staircases and chief apartments. They date chiefly from about 1530, and were the works of Raffaelle's pupils.

Perino del Vaga decorated the Dorian palace in an admirable manner, which was described at length, as conducing to a rich, glowing, and harmonious result, and displaying much excellent drawing and treatment. This palace is, however, now unfurnished and unoccupied.

The decorations in this instance, it was added, are upon red, blue, and black-coloured grounds alternating, while another distinct class is elsewhere produced by painting on the lime itself, and this leaving a light or white ground, as at the Ducal Palace at Florence. Each style, it was contended, possesses advantages, the white ground being recommended for entrance halls and corridors, and the richer full-toned grounds, as harmonising better with the force, tone, and character of fully furnished apartments.

Ecclesiastical examples of fresco painting were also referred to. Those in the Church of the Annunciation at Genoa were mentioned as the richest examples he had met with: other frescoes in the villa Farnescina, and those in the Palazzo Farnese by A. Caracci, were also commented upon. The paper concluded by setting forth that in Italy we now find many copyists and mannerists, but no great painters; the artists of the present day appearing to restrict their efforts to copying the best works of the old masters.

New Books.

The History of Ireland from the earliest Period of the Irish Annals to the Rebellion of 1848. By THOMAS WRIGHT, M.A., F.S.A., &c. London: J. and F. Tallis. Parts I., II., and III.

MR. WRIGHT is so well known by his antiquarian attainments and his published works illustrative of British History, that his name on the title page of this book is sufficient assurance that it will be a careful and able work. With a large amount of learning, Mr. Wright has great industry, and may be relied on for the most pains-taking research and careful collation. Coming at the present moment, when the agitated state of Ireland and the circumstances affecting her prosperity are objects of interest to the whole empire, this history can scarcely fail to command attention, and to ensure that large sale which can alone remunerate its proprietors.

In the first part, the antiquities of Ireland are glanced at, and will, we trust, receive further development from the author as the work proceeds. He is speaking of the earliest period of Irish history, and says—

"The monuments of the earlier inhabitants that remain, confirm in general the statements of the Roman historians, that they resembled the Britons in habits and manners. Their mode of burial seems to have been precisely the same, and this, combined with other circumstances, leads us to suppose that the religious rites of the people of the two islands bore a very close resemblance. In Ireland as in Britain, the graves—the only constructions of the aboriginal inhabitants which have remained entire—consisted of a rough chamber or chambers of unhewn stones, covered with a lofty mound of earth or stones, the base of which was often surrounded with a circle of larger stones. In the central chamber or cist, the body was laid in full dress, accompanied with personal ornaments, weapons, or other articles, or if cremation had preceded the burial, the bones were placed in an urn, and similar articles were strewed on the floor. These monuments are of frequent occurrence in Ireland as well as in England, and they are often of enormous magnitude, as in the case of that of Newgrange, near Drogheda, in the county of Meath, and of two others in its immediate neighbourhood. It is far from improbable that Stonehenge, in England, was designed for an enormous sepulchral monument. In the numerous instances where the mound has, in the course of ages, been cleared away, and nothing but the central chamber and the external circle of stones is left standing, the former has received the name of a cromlech, and the latter that of a Druidical circle; and antiquaries who trusted more to their imagination than to a careful comparison of facts, thought they had been temples and altars.

In one respect, the contents of the sepulchres of the ancient Irish seem to contradict the Roman authorities, inasmuch as they apparently testify a higher degree of cultivation than in Britain. In most cases, the Irish urns are better made and much more richly ornamented than the British urns. The personal ornaments are more numerous and of greater intrinsic value, and articles of gold are far more abundant. Their forms and ornamentation are, however, similar in character; and we have other proofs that gold was found in Ireland in great abundance at a remote period."

The work is to be illustrated by Mr. Henry Warren, the president of the New Water Colour Society. Some of the prints already given are scarcely up to the mark, but this we must attribute to the engraver rather than to the artist, whose skill and power are admitted by all.

Incitements to Studies of Steam and the Steam-Engine. By W. TEMPLETON., R.N., Woolwich. Silverlock, Wardrobe-terrace, Doctors'-commons.

THIS is a pocket *brochure* of thirty-eight pages, containing, in the shape of question and answer, facts pertaining to steam and the steam-engine, a knowledge of which the British Government demand as necessary qualifications for engineers in the naval service. We suppose there are few holding such responsible situations who do not know all that this little book teaches: still it may be found a useful prompter.

We give one question and its answer as a sample:—

"*What is the difference of the temperatures relative to the production of steam at equal densities, from those of fresh and sea waters individually?*

Sea water naturally holds in solution $\frac{1}{33}$rd. its weight of salt, which becomes gradually augmented by evaporation; each grade as approaching to saturation requiring a higher degree of temperature in attaining the boiling point;—thus, at $\frac{2}{33}$rds of saturation, the boiling point is 214·4° Fah.; at $\frac{3}{33}$rds. it is 215·5°; and at $\frac{4}{33}$rds., beyond which grade of saturation the water in a steam or marine boiler ought never to be allowed to exceed, the boiling point is elevated to 216·7°; hence, to find the degree of temperature at which steam of a given density would be obtained from salt water equal to that from fresh water, the excess of temperature due to the saltness of the water must be added; thus,

Suppose the temperature to produce steam at 12 lbs. per square inch, from fresh water, be 245·1° Fah., the temperature to produce the same from water holding $\frac{4}{33}$rds. its weight of salt will be 245·1 + 4·7 = 249·8° Fah., 4·7 being the difference between 212° and 216·7."

The Practical Contractors' and Builders' Pocket Guide. 2nd Edit. Trelawny and Saunders, Charing-cross. 1848.

THIS is a useful collection of tables and calculations in a compendious form, which many will find a valuable pocket companion. No. 22 shews what quantity of brickwork is contained in any culvert, from 9 inches in diameter and 4½ inches thick, to 6 feet in diameter and 18 inches thick, and the number of bricks required for one lineal yard: No. 48 shews the quantity of cube feet in one square of roofing, flooring, common framing, or quarter partition, according to various scantling: No. 49 shews the value of masonry and brickwork in cube yards, and reduced, from 1s. 4d. per foot to 5s. per foot cube. And these will serve to give a notion of the character of the tables.

THE WORKS AT THE NEW HOUSES OF PARLIAMENT.—In reply to several inquirers we are obliged to say,—it is too true that a large number of men have been discharged from these works. Where there were about 1,000 employed, there will now be not more than 500; and after Christmas a further reduction is threatened. What makes this short-sighted policy worse is,—that many of those who have been discharged are picked men, trained to the sort of work in hand, and not easily to be replaced hereafter.

PLAN OF MOOLTAN.—With that promptitude which characterises Mr. Wyld's publications, he has already issued a sketch of the fortifications of Mooltan, which will serve effectually to make known the site of the late disastrous outbreak in India.

Miscellanea.

THE MARBLE ARCH AT BUCKINGHAM PALACE.—Sir: Various sites have been suggested for the marble arch at Buckingham Palace, on its removal from its present position,—amongst others, that it should be placed at the end of the gravel walk in Kensington Gardens. Now it appears to me, that a more suitable site might be found for it than those already proposed. My plan is this, to place it at the present southern extremity of the broad walk in the Regent's-park (the termination of the park on that side), and to lengthen out the broad walk to Portland-place. The arch in this position would form at once an imposing object from Portland-place, and a noble entrance to the park. If it be contended that the extension of the broad walk as proposed by me, would destroy too much of the gardens in Park-square and Park-crescent, at least the trees and shrubs might be removed, and a grass plat, of the same width as the broad walk, be laid down in a continuous line with the walk to Portland-place: thus the vista along the latter to the arch would be uninterrupted, and the area of the gardens undiminished. Another good situation for the arch might be made by continuing the mall in St. James's-park, in a straight line to Charing-cross, and placing the arch at that end of the mall. On this site the arch would still be preserved as the entrance to Buckingham-palace, and the now circuitous and objectionable route to the palace under the building of the Horse Guards avoided. As this plan, however, would involve a heavy expenditure in the demolition of houses, and the purchase of their sites, perhaps the situation first suggested by me would be the preferable of the two. ALPHA.

ART AND RELIGION.—In the course of a lecture on the Relation of Literature and Art to Religion, delivered by Mr. G. Dawson last week, at the Whittington Club (Strand), the lecturer said he would not give much for any painting that did not express much more than was exhibited on the canvass, nor for the artist who did not aim at the accomplishment of so valuable an achievement. He wished that our artists would, like the immortal Michelangelo, aim to achieve what was comely and beautiful, rather than what was simply useful. Nature, which in a wise man was a method, was to him everything. He was not a "bread" artist—he did not paint, as some of our artists (from necessity) paint, for the market; he was an artist of the soul, and painted from and true to nature. The lecturer then proceeded to shew that art, as exhibited in painting and music, had been torn, in a manner, from religion, between which and it there was a divine association, and said they wished to know now whether it was possible so to re-unite them as to make them auxiliary to each other. To effect this, what were they to do? In these Protestant days they were rather out of tune with art. True, they had several new churches in course of building; but their great error was trying to invoke the antique spirit of church architecture. He wished they would throw more soul into them. They were unable to go on, or to appreciate art without a "guide," and if modern art did not go a little more forward, it would sink into a state of rheumatic frigidity. They should go forward then with spirit, and not attempt to warm up old art. He needs not dress in Cato's toga in order to have Cato's soul. Let them, he should say, be bold men of to-day, and if they agreed to have a saint, let it be a saint of to-day.

THE WESTERN LITERARY INSTITUTION is pursuing usefully a course commenced in a former session,—that of bringing before its members illustrations of new manufacturing processes, &c., in addition to stock lecture subjects. The magnetic telegraph; locomotives; processes for preserving timber, and Drayton's process for silvering glass, have been amongst them. A notice of the Aneroid barometer is to be given on the 20th.

PROJECTED WORKS.—Advertisements have been issued for tenders—by 18th instant for works required in fitting-up gallery of lecture theatre for Birkbeck School, London Mechanics' Institution; by 15th, for the erection of a work-shed at the workhouse, Hampstead; by 1st proximo, for locomotive stores for the Midland Railway Company.

THE METROPOLITAN SEWAGE MANURE COMPANY held their usual general meeting at their offices, 7, Waterloo-place, Pall Mall, on 7th inst., when reports of directors, engineer, and auditors, statement of accounts, &c., were read. The reports announced the progress of the company to be sound and encouraging, the engineer's more particularly detailing the state of the works as now so far forward that, with the engine and other apparatus set to work, a series of satisfactory experiments had been gone into, and 300 tons of sewage water lifted per hour. A distribution of pipes for a district of 700 acres was announced. On a motion being made that the report of the directors be received and adopted, and be printed and circulated among the shareholders should the directors see fit, a long and somewhat stormy discussion arose, mainly on the subject and merits of a protest by Mr. Smith of Deanston (as we understood) and three other gentlemen, against the proceedings of the directors in the matter in dispute with the Sewers Commissioners, during which it was elicited that not only had the dispute in question been settled, but a boon had been granted by the commissioners, for fifteen months, to which it appeared the company had no legal title by their Act, namely, liberty to take sewage water from the opening of the Counters 'Creek Sewer into the Kensington Canal; that the liberty to do so enabled the directors to be going on with something profitable in place of resting on their oars, as they must otherwise do till the new scheme of general sewage to be gone into by the Commissioners of Sewers should be carried out; that the sewage water thus granted them, though not sewage properly speaking, was much stronger than many were led to conceive, each gallon yielding, near low water, no less than sixty-one grains of matter, not that in mere suspension, but in full solution, while the strongest quality of the sewage in the King's College pond sewer yielded but 80 grains, and the average only 46 grains; that the canal water itself yielded 36 grains, and was therefore double the strength of Thames water; and that as to the legality of the directors' proceedings and their dispute with the Sewers Commissioners, it was already their intention to call a special general meeting, in which a detail of these would be entered into with the shareholders. The motion was ultimately carried, in the face of more than one amendment, by a majority of 15 to 1. The minutes of the previous meeting were then read and confirmed, and other resolutions were put and carried before the meeting separated. In course of the proceedings it was stated that the Company now comprised about 160 shareholders, exclusive of the directory.

THE STATE OF THE LONDON SQUARES.—My dear Builder,—Do you ever walk through Russell or Bloomsbury or Brunswick or Mecklenburgh squares? If so, you must have observed at this time of the year a fearful amount of decaying vegetation in the shape of dead leaves, covering the area of the ornamental grounds of these squares. What can the inhabitants be about? In my way to the city, I pass two or three of these fashionable muck-heaps, and I have observed no clearance of the leaves for *fourteen days*. Given, the amount of dead leaves on an average of eight acres well moistened by the rains of this variable season; required, the amount of pestiferous malaria engendered for the especial benefit of the denizens of these aristocratic piles of building. Do launch an anathema against this bad example of apathy and dirtiness shown to the poorer classes by those who should be foremost in the race of cleanliness and decency—or a side blow in a corner—some of your '*fulmina secunda*'—would perhaps suffice to wake the sleepy souls, and I shall not be either compelled to wander out of my way down the New-road, or lose myself in the classic purlieus of Drury-lane or Clare-market. A.

MEETING OF SOCIETIES.—The Royal Society and the Society of Antiquaries will commence their session on Thursday next, the 16th inst. The Institute of Architects will hold their first meeting on Monday, the 20th. The Architectural Association will have a meeting on the 17th. The Manchester Athenæum *soirée* will be held on the 16th, when Lord Mahon will preside.

BLIND BUILDERS—RETURN OF THE DISORDER.—Tenders for additions to two houses in Dean-street, Fetter-lane; Mr. King, architect.

Madgin	£244
Hawke	225
Passmore (accepted)	172

For rebuilding the public-house known as the Black Dog, Shoe-lane.

Messrs. I'Anson	£1,396
Paul	1,332
Messrs. Arding	1,310
Starkey	1,291
Messrs. Locke and Nesham	1,290
Brake	1,240
Parkyn	977

For new shed and other works at the Grosvenor Canal Basin; Mr. Cundy, architect.

Nowell	£215	0	0
Fitzpatrick	209	0	0
Stoner	183	0	0
Lloyd	177	0	0
George	176	10	0
Bennett	174	0	0
Newman	173	10	0
Walker and Soper	160	0	0
W. Gerry	157	10	0
R. Watts	154	0	0
Underhill	153	0	0
Higgs and Son	153	0	0

ART IN THE CRADLE AT LIVERPOOL.—

"Gif Leverpooles good maior sd everre be
Made fatherre inne hys yere off maioraltee,
Thenne sal be giften, bye ye townemenne free,
Ane silverre cradle too hys fair ladye,"

says the old legend; and the present mayor, Mr. Horsfall, having had the good fortune to *be* made a father in his year of mayoralty, a number of the burgesses subscribed to maintain the custom. Last week the cradle was presented, and is thus described by the local press:—"It is a fairy-like model, of the value of 120*l*., and is a beautiful work of art, placed under a glass shade, forming a magnificent ornament for the drawing-room. The general form of the body is that of the nautilus shell, which was chosen as being appropriate to a seaport town, on one side of which is chased, in high relief, a group of figures, representing a mother placing in the arms of its father their new-born child. Supporting the medallion on which the figures are placed are two angels, with expanded wings; and issuing from beneath them, and under the medallion, are beautiful scrolls of poppies and lillies, emblems of Sleep and Peace. On the top of the scroll or apex sits the Genius of Liverpool; and at the foot stands the Liver, the ancient bearing in the arms of the town. The cot rests at each end on axles, so as to allow it to rock backwards and forwards. These are passed through the stems of two large seaweeds, or lavers. At the bottom of their stems are two sea-fish, resting on a richly chased ground or shore, strewed over with shells, coralines, fuchi, and other marine plants and objects." At the base of the whole is written on one side, "Ye spirit of ye legende," which we have given above, and on the other an explanatory dedication. The design is attributed to Mr. Solomon Gibson, sculptor, of Liverpool, brother of Mr. John Gibson, of Rome.

ELDON CHURCH, OVER A COAL MINE.—Sir: In your notice, last week, of churches, you mention the new church for the Eldon district, Sheffield, and ask the question—Why it was built over an old coal mine? Most of the land in that neighbourhood is undermined, but only to a short depth, averaging about 10 yards. To render the building perfectly secure, I had 5-feet square shafts sunk to the solid ground; these are filled up with rubble, and well grouted. The shafts are 15 feet apart, centre and centre. From these shafts, double brick semi-circular arches were thrown over,—the ground being cut out the shape required, thereby forming the centres for the arches. You will see by this that the whole rests on a solid foundation. The extra expense of putting in this foundation has not exceeded 50*l*. above what an ordinary one would have cost. For my own part, I never entertained the slightest doubt as to the stability of the foundation; and I do not anticipate more than very slight settlements arising from the great quantity of rain that has fallen, and what is ordinary in such buildings.—JOSEPH MITCHELL, Sheffield, November 6, 1848.

MUSIC AND THE NEWS.—A novel and not uninteresting addition to the promenade at Drury Lane Theatre has been made by Mr. Frederick Gye, in the shape of a *reading-room* profusely supplied, not merely with the London and provincial papers, but with those of many foreign parts, and wherein scores of people may be seen, during the performance of some of the fine music which M. Jullien has taught the multitude to enjoy, at the same time gathering the news. The enthusiasm with which the National Anthem is received here nightly, wonderfully played as it is,—an enthusiasm which allows no hat to be seen on,—an enthusiasm which is positively almost delirium, and perhaps almost too hot to last,—is a fact to be noted and enjoyed too, whether by THE BUILDER or the *Morning Post*. It would do a red-republican good to see the uproarious rogues.

THE TRIANGULATION OF LONDON.—The "crow's nest," built on the top of St. Paul's to enable the sappers and miners to survey the metropolis, has been taken down. We find the following notes in several of our contemporaries, and cannot, therefore, give them the right parentage:—"Although the scaffold was only up three months, the observations taken were between three and four thousand, in which were included every division in the degree. In many instances the same object was gone over as many as six times, none less than three or four. The utmost distance obtained was 26 miles in the circle, with the exception of the north-west point; here Highgate-hill impeded the observations, the crown of the hill being higher than the level from which the observations were taken. With this single exception no difficulties presented themselves, and the survey, and the various altitudes obtained, are of the most satisfactory description. In the language of the parties engaged, the metropolis and the surrounding counties may be considered nearly a level plain. The extreme height of the scaffolding, from the base to the crown upon which the observatory was built, was 91 feet, and took between a fortnight and three weeks in raising. As the whole was bound together with ropes, about one and a half ton was used for the purpose. It may be gratifying to know that in this perilous undertaking not the slightest accident, not even to the breaking of a single pane of glass, occurred, while only some of the corners of the planks were chipped off during the removal. The most dangerous part of the work was the fixing of the poles which supported the cradle, immediately beneath the principal dome. These extend beyond the gallery 35 feet, and great skill and caution were requisite in fixing, as well as in removing them, for had the slightest slip occurred no power could have prevented them falling through into the church. The number of persons employed was ten. It may be interesting to know that the time which they occupied in going up was about seven minutes, while from four to five minutes were occupied in the descent. Some of the persons had to go up and down three or four times a day. During the period the scaffold was up the lead-work of the upper dome was repaired. The expense of the survey" [the *structure*, we suppose, is meant] is very small, as the materials were supplied by the Commissioners of Woods and Forests." Our readers are aware that we do not look for a very satisfactory result from this survey,—a feeling which is participated in, we believe, by those engaged in the work.

ELECTRO-TELEGRAPHIC PROGRESS. — A signal or announcement whistle, of a simple construction, has been invented in place of the old clock-work alarum, by Mr. N. Holmes, of the General Telegraph Company. The *Mining Journal* describes it as consisting of an air-tight box, containing a lever, acted on by the voltaic magnet, and opening a valve on the extremity of the whistle, which is sounded by air introduced through a gutta percha pipe from an iron reservoir, drawing out, or chargeable, by mere hand, on the telescope principle. ——A letter from New York says that the scientific world there is much engaged in the contest among telegraph inventors. "The great merit of the discovery," it observes, "lies with Mr. Morse, his plan being everywhere successful. This gentleman is by profession a historical and portrait painter, and

has attained great eminence in his art, and been honoured with medals in Paris. Some years ago, when crossing the Atlantic, he invented his telegraphic system, and ever since has thought of little else. He had scarcely succeeded, before there were attempts to vary his principle, and change the form of its application. The most serious opposition has been on the part of an American of the name of Horn. His telegraph prints the communication on slips of paper. The letters are stamped by electricity, and the connection is closed or opened by means of a keyboard. The cylinder on which the types are set revolves, however, by mechanical power. The words of Mr. Morse's patent cover every design for printing letters as well as making arbitrary characters, and it remains to be seen how far the courts will follow its intention. Mr. Bain has also his plans before the public, but as yet he has obtained no patent in this country, in consequence of Mr. Morse having entered a caveat at the patent-office."

VENTILATION OF ROOMS.—Touching a letter thus headed in our last number but one, we have received four or five communications, recommending the use of Arnott's chimney valve. We have so often mentioned this excellent arrangement for getting rid of the vitiated air, and urged its more general adoption, especially where gas is burnt, that it ought to be unnecessary for us again to allude to it. Modifications of the Buildings Act are required to admit in London of more extensive measures for ventilation on the same principle, and will, we have little doubt, force their way as public opinion on the subject gets stronger.

LEICESTER CEMETERY COMPETITION.—The selected plan is by Messrs. Hamilton and Medland. The decision was not arrived at without sundry assertions of unfairness on the part of members of the council.

TO CORRESPONDENTS.

"Publication of Electro-Telegraphic News."—By the inadvertency of a correspondent in whose accuracy of intelligence we have reason to confide, the subject of a disagreement which occurred at *Manchester*, was made to apply to *Liverpool* in a late number of THE BUILDER. The object of the paragraph referring to that disagreement, remains untouched, but we deem it an act of justice to Mr. Warburton, superintendant of the Liverpool Exchange, at once to insert his denial of any such occurrence at Liverpool.

"I. A. I."—Oxalic acid, or rot-stone and oil, has been recommended for cleaning brass.

"A Householder."—If injury can be proved, the projection of building may be prevented.

Received.—"B. B.," "J. G.," "L. T." (we will try and call), "T. M. R." (thanks), "Sir T. D.," "Secretary, Builth," "Zero" (we do not remember who laid down the glaciarum; ask at the Coliseum), "W. B.," "J. C.," Liverpool (will find our views on the subject in present number), "J. L.," Lille (may depend on our silence), "J. M.," Bolton (the patent in question has been mentioned by us), "J. B.," (we will wait and see the view about to appear), "J. R.," "A. H." (the suggestion has been made before), "G. O." "W. B." (too long ago for us to remember), "Constant Subscriber," "Museum Disnelanum;" Description of Collection of Specimens of Ancient Art in possession of John Disney, Esq., F.R.S., Part II.: Rodwell, Bond-street; "History of Architecture, its present Condition in Europe and the United States," by Mrs. L. C. Tuthill: London, John Chapman, 142, Strand; "A Letter to the Right Hon. Lord John Russell, on Indian Railways," by an East-Indian Merchant, 1848: London, Smith and Elder: "A Treatise on Public Slaughter-Houses, in Connection with the Sanitary Question," by R. B. Grantham, C. E.: Weale, Holborn—Renshaw, Strand; "The Architect, Builder, and Contractor's Pocket-book of Prices, &c.," 1849. Weale; "Osmond's Christian Memorials" (last part): Masters, Aldersgate-street, 1848; "Milner's Descriptive Atlas of Astronomy (parts VII. and VIII.): Orr and Co.

"Books, Prices, and Addresses."—We have not time to point out books or find addresses.

ADVERTISEMENTS.

PATENT TOUGHENED CAST-IRON. Messrs. GARDEN and MACANDREW beg to call the attention of Architects, Builders, Engineers, Iron-founders, &c., to the above description of IRON (Mr. Morries Stirling's patent), which, after numerous trials, experimental and practical, is found greatly to exceed all other cast-iron in tensile and transverse strength, as well as in resistance to crushing forces. Several of the most extensive iron masters have been licensed, and from them, or their brokers, the patent iron can be procured. Messrs. GARDEN and MACANDREW have always a stock of this iron in pigs, and are ready to execute orders to any extent on the shortest notice.

27, Queen-street, Cheapside, November, 1848.

TO BUILDERS, &c.

REDUCED PRICES.—COTTAM and HALLEN, Cornwall-road, Lambeth, Ironfounders, Smiths, and Manufacturers of every description of Ironwork for building purposes. Kitchen Ranges, with Circular Oven, Boiler, wrought bars, and bright fittings, 3 feet, 2l. 3s.; 3 feet 6 inches, 2l. 12s. 6d.; 4 feet, 4l. Cottage Ranges, with Oven and Boiler, 3 feet 2 inches 2l.; 3 feet 4 inches, 2l. 2s.; 3 feet 6 inches, 2l. 4s.; Registers, 7d. 8d., and 9d. per inch. Elliptics, 3d. to 4d. per inch. Pipes, Gutters, Columns, Railing, Verandahs, Sash-weights, Gratings, &c., at reduced prices. A discount for cash.

REDUCED PRICES.—WILLIAM CLEAVE, of Wilton-road, Pimlico Basin, begs to acquaint Builders and the Trade that he has now on hand, at his Manufactory (the first of its kind ever established), a very large Assortment of Dry and Well-seasoned OAK AND DEAL PREPARED FLOORING BOARDS and MATCH BOARDING of all sorts, from ¾ inch to 1½ inch thick, planed to a parallel width and thickness, and at greatly Reduced Prices. Also, Timber, Deals, Oak Planks, Scantlings, Sash Sills, Moulding prepared by Machinery, Laths, &c.

Apply at W. CLEAVE'S Flooring Manufactory and Timber Yard, Wilton-road, Pimlico Basin, late C. MOORE and SON.

A REDUCTION in the PRICE of FLOOR BOARDS.—ALFRED ROSLING begs to inform the Trade and Consumers generally, that he has REDUCED the PRICE, and keeps constantly in stock a large and very general assortment of Prepared Floor Boards and Matched Boarding, laned to a parallel breadth and thickness, and fit for immediate use; also a variety of machine-prepared Mouldings, which are finished with great accuracy and attention to quality of workmanship.—Southwark Bridge Wharf, Bankside, and Old Barge Wharf, Upper Ground-street, Blackfriars.

THE LOWEST PRICES for CASH.—T. ADAMS (late S. DARE), MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, near the Bricklayers' Arms. SEASONED FLOORING, MATCH-BOARDING FIT FOR IMMEDIATE USE, and MOULDINGS prepared by machinery. Cut Deals and Scantling of every dimension, Mahogany, Cedar, Rosewood, Wainscot, Elm, Beech, Oak, &c., in planks, boards, veneers, and logs; Pantile, Oak, and Fir Laths; Wheelwrights' Goods. All sawn and prepared goods delivered free of expense (except timber). Sawing charged at mill prices. Very extensive Drying Sheds.

MUIR'S PATENT PLANING MACHINE.

SAW MILLS, GILLINGHAM-STREET, PIMLICO.

TIMBER of any size, PLANK, DEALS, and BATTENS, &c., Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

Address to HENRY SOUTHAM,
Saw Mills, Gillingham-street, Pimlico.
N.B. Estimates given for Sawing and Planing.

WOOD THOROUGHLY SEASONED in DAYS instead of YEARS, by DAVISON and SYMINGTON'S PATENTED PROCESS, at the Patent Desiccating Company's Establishment (for Seasoning, Sawing, and Planing Wood), at the Grand Surrey Mills, immediately adjoining the Commercial and East Country Docks, Rotherhithe. The new process ensures the entire removal of moisture, hardens the gums, prevents further shrinkage, and strengthens the fibre.—For scale of prices, or license to work the patent, or any further information, address, post-paid, or apply to ANGUS JENNINGS, Secretary.

The Patent Desiccating Company's Offices are REMOVED from 28, New Broad-street to No. 41, GRACECHURCH-STREET, CITY.

The Company's Agents are—Mr. WM. LANE, Irwell-buildings, Manchester (late of Stockport); Messrs. RANDOLPH, ELLIOT, and Co., Glasgow; Messrs. CLIFFORD and BROWN, Hull.

TIMBER-PRESERVING COMPANY.—(PAYNE'S PATENTS for the PRESERVATION of TIMBER AGAINST DRY ROT, FIRE, RAVAGES of WORMS, &c.)—The above Company are ready to enter into arrangements for the Preparation of Timber at any of their undermentioned stations, viz.:—

Whitehall Wharf, Westminster,	Lynn,
Fleetwood-on-Wyre,	Staines,
Wisbech,	Guildford,
Gateshead,	Southampton,
Barnstaple,	Hartlepool,
Leicester.	Darlington;

and they will 'erect the necessary apparatus wherever there is a considerable quantity of timber to be prepared.—Further particulars, with prices, may be obtained at the London Works, Whitehall Wharf, Cannon-row, Westminster.

PLATE GLASS.—THE BIRMINGHAM PLATE GLASS COMPANY, Smethwick, near Birmingham, and 141, Fleet-street, London, supply silvered, polished, picture, and rough plate glass, of first-rate quality, and on the most advantageous terms. ESTIMATES for SHOP FRONTS, &c., with samples of the glass, forwarded on application, to any part of the kingdom.

THE UNION PLATE GLASS COMPANY beg to call the attention of architects, surveyors, builders, large consumers, and the trade generally, to the quality, colour, and substance of their highly-finished glass, and as the discounts vary according to size, they prefer giving a special estimate for each quantity required. To encourage the use of Plate Glass for glazing purposes, the price is considerably reduced, which will, for its durability and appearance, insure the preference to any other description.

ROUGH PLATE GLASS supplied for skylights, warehouses, workshops, and flooring, 3-8ths, ½, ⅝, and 1 inch thick.

London Warehouse, 99, Hatton-garden, Holborn.
H. CHRISTIE, Agent.

SOHO PLATE GLASS COMPANY, CROWN, SHEET, PATENT PLATE and ORNAMENTAL GLASS MANUFACTURERS.—ALFRED GOSLETT begs to call the attention of Builders and the Trade to the following quotations:—

Thirds Crown, per crate 18 tables	£3	2	6
Fourths " " "	2	7	10
C C " " "	2	1	0
C C C " " "	1	18	0
Horticultural, 13 oz. sheet, per crate, 2½d. per foot.			
Fourths, ditto ditto 2½d. "			
Horticultural, 16 oz. ditto, ditto 3½d. "			
Fourths, ditto ditto 3d. "			
Horticultural, 21 oz. ditto, ditto 4d. "			
Fourths, ditto ditto 5d. "			
Ditto, 26 oz. ditto, ditto 6½d. "			
Ditto, 32 oz. ditto, ditto 8d. "			

Ornamental Glass of very superior patterns, from 1s. 3d. per super. foot, cut to order; or 1s. in stock sizes. A separate tariff for Patent Plate at the lately reduced prices, will be forwarded upon application.

Plate Glass, for glazing purposes, at very reduced prices. Rough Plate ¼, ⅜, ½, and ¾ inch thick.

WINDOW GLASS. — THOMAS MILLINGTON solicits an inspection of the different GLASSES he has now in stock, the qualities of which will be found to be very superior.—87, Bishopsgate-street, Without.

NEW TARIFF.—Sheet in various large dimensions delivered free in London.

Common in 100 feet cases			20s. 0d.
Do.	200	do.	38s. 0d.
Thirds	200	do.	42s. 6d.
Seconds	200	do.	66s. 8d.
Best (very superior)	do.		100s. 0d.

ROUGH PLATE GLASS for WINDOWS, SKYLIGHTS, and FLOORS in sizes not exceeding 5 feet superficial.

¼ thick	1s. 0d.	½ inch	2s. 0d.
3-8th inch	1s. 2d.	¾ inch	3s. 0d. per foot.
⅜ inch	1s. 6d.		

PATENT ROUGH PLATE TILES.

¼ thick	6s. 11d.	3-8th inch	1s. 7d.
½ inch	1s. 3d.	¾ inch	2s. 0d. each.

GLASS DOMES for SKYLIGHTS, from 15 to 30 inches in diameter. These are well worth notice.

C C C Crown per crate 18 tables	£1	16 0
C C do. do.	2	0 0
Fourths do. do.	2	7 0
Thirds do. do.	3	3 6

Large Crown Squares in 100 feet boxes ..... 2½d. per foot.
8 by 6 — 10 by 8 do ..... 2d. do.
Very superior Plate for Pictures and Windows, averaging 26oz. from 1s. 6d. per foot upwards.

CHEAP ORNAMENTAL GLASS.—I beg to inform my friends and the public, that I have now completed a new ENGINE, and, owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT SUP., and borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and painted work on the most moderate terms.—CHARLES LONG, No. 1, King-street, Baker-street, Portman-square.—Cash only.

WINDOW GLASS.—JAMES PHILLIPS and Co. beg to inform the trade and consumers they have a large STOCK of SHEET GLASS of superior quality on hand, which they will supply in cases containing 200 feet, of sizes about 40 by 30, at 49s. 6d. per case—delivered free in any part of London.—Address, 116, Bishopsgate-street Without.

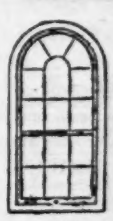
E. and W. H. JACKSON beg to call the attention of Builders and the trade to the reduced prices of their PATENT PLATE GLASS, which, from its cheapness, is now superseding crown, in all respectable dwelling-houses. BRITISH and ROUGH PLATE, CROWN, SHEET, STAINED, and ORNAMENTAL GLASS, supplied of the best manufacture, and at the lowest terms. List of prices, estimates, and every information can be had on application at their warehouse, 315, Oxford-street.

CHAS. WM. WATERLOW,
MANUFACTURER

of Sashes and Frames, and Joiner to the Trade, 121, Bunhill-row, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices.—Upwards of 400 DOORS, and a large variety of Sashes and Frames, always on sale. Glazed goods securely packed for the country. Steam-struck Mouldings in any quantity.—N.B. This Establishment is worth the notice of all engaged in building.

SHOP FRONTS, SASHES AND FRAMES, DOORS, &c. MADE FOR THE TRADE.

JOHNSON and PASK,
1, Amwell-street, Clerkenwell, near the New River Head,



Beg to inform the Trade, and the Building Public in general, that they continue to manufacture Sashes and Frames, Shop Fronts, Doors, and all other kinds of Joiners' work, on the lowest possible scale of prices. All kinds of Wainscot and Mahogany work done in the very best manner; French polished, and carefully packed for the country.—A full list of prices forwarded by return of post, to any part of the country.

ENCAUSTIC, VENETIAN, BATH, and other PATENT TILES, and MOSAIC PAVEMENTS, may be obtained in great variety at MINTON and Co.'s Warehouse, 2, Albion-place, Surrey side of Blackfriars-bridge; and at their Manufactory, Stoke-upon-Trent, Staffordshire.—N.B. Slabs and Tiles for Fireplaces, plain and ornamental; Door Furniture, &c.

PAVING, 2s. 9d. PER SQUARE YARD, Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low price, and the work guaranteed.—Apply to JOHN PILKINGTON, POLONCEAU'S BITUMEN PAVEMENT OFFICE, 15, WHARF-ROAD, CITY-ROAD.—N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

ANSTONE STONE WHARF, STANGATE.—Mr. GRISSELL has the honour to inform Architects and Builders that he has made arrangements for the SUPPLY of the ANSTONE STONE for all building purposes, and which can now be seen at the above wharf by application to Mr. W. G. WARDLE, of whom every necessary information can be obtained.—August 30, 1848.

ANSTON STONE, used for Building the New Houses of Parliament.—W. WRIGHT and Co. beg to inform Architects, Engineers, Builders, and others, the Anston Stone can be supplied in any quantity on the shortest notice. This valuable stone, so celebrated for its durability, colour, and texture, is well known, having been selected in preference to all others, by the Commissioners of Woods and Forests, for building the New Houses of Parliament. It is very superior for Monuments, Tombs, &c. &c.

W. Wright and Co. have made arrangements to have a stock always on hand at the Marble and Stone Wharf, Horsfall-basin, Maiden-lane, King's-cross.—Any further information can be obtained on application to W. WRIGHT and Co., Anston, near Sheffield; or to T. SHARP, their Sole Agent in London, 27, Burton-crescent.

CAEN STONE.—Original Sufferance Depôt, Norway Wharf, Greenwich.—W. TUCKWELL, Caen Stone Quarry Proprietor and Importer, begs to invite the attention of Architects, Surveyors, Builders, and others to the Stock of CAEN STONE on his Wharf; he is prepared by constant arrivals to execute orders to any extent on the most advantageous terms.—Shipments made to any port direct from his quarries at Caen.

N.B. Orders received at the Wharf, as above; also at the Offices of Mr. R. A. WITHALL, Surveyor, 30, Cheapside, where further information and samples may be obtained.

CAEN STONE, from the first Quarries of Allemagne. Depôt at the Whitby and Scotch Wharf, 14, Fore-street, Limehouse.

P. FOUCARD, quai des Abattoirs Caen (propriétaire des Carrières à Allemagne), begs leave to inform Builders, Architects, and others, that he has, on the above-mentioned wharf, 50,000 feet of the best stone ready to meet the demands of purchasers.—Contracts taken for any quantities.

Orders received by Mr. BASCHET, at 29, Stoney-street, Borough Market,—Cargoes shipped to order, from Caen, to any port.

CAEN and AUBIGNY STONE.— LUARD, BEEDHAM, and Co., Proprietors of extensive Quarries of best Caen Stone at Allemagne, and Aubigny Quarries, near Falaise, Normandy, beg respectfully to invite attention of Archæologists, Architects, Engineers, Surveyors, Builders, and others to the above. Caen Stone is too well known to need special notice. Aubigny Stone, from its fineness of grain, hardness of texture, beauty of colour, freedom from vents, shell, and great durability, ranks amongst the first for building and engineering purposes, hall paving, staircases, sculpture, tombs, cemetery works, and general masonry. L. B. and Co. have for many years supplied large quantities to various parts of the continent for public works, light-houses, &c., under the patronage of the Royal Engineers. Orders executed to all parts of the United Kingdom with despatch direct from the quarries. A large stock of seasoned Caen and Aubigny Stone always on hand, at Caen Sufferance Wharf, Rotherhithe, where samples and information may be obtained.—Office, 18, Southwark-square, Southwark-bridge-road, Southwark.

SAMUEL CUNDY, Mason and Builder, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Pimlico, begs to inform Architects and the Public that MASONS' WORK, in all its branches, is executed on the most reasonable terms, in such manner as must meet the views of his Patrons.

GOTHIC WINDOWS and the more elaborate Works produced at a reduced cost, on a system that combines economy with the required accuracy and truthfulness.

FONTS from 5l. upwards.

MONUMENTS and TOMBS in great variety of design.

The most varied Assortment of ORNAMENTAL, PLAIN, and ENCAUSTIC TILES, in Town, on view.

Stone-box Chimney-pieces, from		12s.
Vein-Marble	" "	40s.

RESTORATIONS Estimated for (in which Branch S. C. has had considerable practice). Dairies fitted up, &c. &c.

Goods Landed, Housed, and Delivered.

IRON ROOFING WORKS, SOUTHWARK.—JOHN H. PORTER, manufacturer of Iron Roofs and Buildings, Iron Hurdles, and other fences, and iron work generally. Lists of prices and estimates furnished upon application.—Office, 2, Adelaide-place, London-bridge, City.

NAILS and IRONMONGERY from BIRMINGHAM.—To BUILDERS, ARCHITECTS, &c.—Nails, Locks, and every description of Builders' Ironmongery, of the best quality, supplied at the lowest Birmingham prices, by FREDERICK BLYTH, Patent Cut Nail Manufacturer and General Factor, Edmund-street, Birmingham. Lists of prices forwarded upon application.

IRON FOUNDRY, 9, Brick-lane, Old-street, St. Luke's.—J. J. JONES having made great additions to his STOCK OF PATTERNS, begs to inform the Trade, that he can now supply them with Plain and Ornamental Iron Columns, Girders, Railings, Gates, Iron Coping, Balconies, Window Guards, Verandahs, Ornamental Staircase Panels, Iron Staircases, Tomb Enclosures, Trellis Panelling, Lamp and other Brackets, Cantilevers, Newel Bars, Water Closet Work, Area Gratings, Fly and other Wheels, Wheel Plates, &c.

BAKER'S OVEN WORK, Forge Backs and Troughs, Rain Water Pipes and Gutters, Sash Weights, Furnace Bars, Stoves, Ranges, &c., always in stock.

IRON FOUNDRY,
168, DRURY-LANE, and CHARLES-STREET, DRURY-LANE
JOSEPH GLOVER,

Solicits the attention of the Trade to his extensive Stock of PATTERNS for CASTINGS of EVERY DESCRIPTION, consisting of those for every purpose, either structural or ornamental.

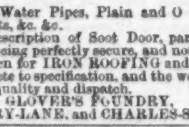
Wheel Pinion and Steam-Engine Patterns; Range Stove and Hot Plate Metal.

A stock of Rain-Water Pipes, Plain and O G Guttering, Air Bricks, Sash Weights, &c. &c.

A very superior description of Soot Door, particularly suitable for internal work, being perfectly secure, and not unsightly.

ESTIMATES given for IRON ROOFING and every description of Ironwork, complete to specification, and the work executed with every attention to quality and dispatch.

GLOVER'S FOUNDRY,
168, DRURY-LANE, and CHARLES-STREET.



LAP WELDED IRON TUBES.—W. H. RICHARDSON, Jun., and Co., MANUFACTURERS of every description of WROUGHT IRON TUBES for Locomotive and Marine Boilers, Gas, Steam, and other purposes.
PATENT TUBE WORKS, DARLASTON, STAFFORDSHIRE

GALVANIZED IRON FOR ROOFING, &c.—The Galvanized Iron Company beg to direct the attention of architects, surveyors, builders, and others, to their Patent Galvanized Iron, which is peculiarly adapted for ROOFING and BUILDING PURPOSES, especially for Tropical climates, being cheaper and more durable than zinc, lead, tin, or any other metal, calculating weight and strength. This fire-proof material has been used for roofing the new Houses of Parliament, ship-building and timber sheds in her Majesty's dock-yards of Deptford, Woolwich, Chatham, and Portsmouth; and at many of the principal Railway stations, gas works, &c. &c. This material is also admirably adapted for the construction of conservatories, fire-proof buildings, chain and wire rope bridges, corrugated doors, shutters, &c. &c. Specimens may be seen, and every information obtained at the Offices of the Company, No. 3, Mansion House Place, City—London; Works at Millwall, Poplar, Middlesex; Broad-street, Birmingham; Cobyn's Hall, near Dudley.

TO BUILDERS and CARPENTERS.—Elliptic Stoves, double backs, 3d. per inch. Registers, 6½d 7d., 8d. per inch.

Cottage Ranges, with Ovens and Boilers, 3 ft. 2 in., 40s.; 3 ft. 4 in 42s.; 3 ft. 6 in., 44s.

Self-acting Ranges, with Circular Oven and Back Boiler, best Wrought Bars and Bright Fittings,
3 ft., £3 3s. 3 ft. 6, £3 12s. 6d. 4 ft., £4.

Best Patent Cut Clasp.

4½d.	5d.	7d.	10d.	1s. 2d.	1s. 8d. per 1,000.
3d.	4d.	6d.	8d.	10d.	20d.

Best Sheet Floor Brads 13s. per cwt.
Best Town Glue 33s. Do. Scotch, 52s. per cwt.

Best Patent Sash Line.

4s. 3d.	5s.	6s. 6d.	7s. 6d.	10s.	12s. per gross.
1	2	3	4	5	6

At F. B. WILLIAMSON'S IRONMONGERY and STOVE WAREHOUSE, 35, Chiswell-street, Finsbury-square.

Lists of Prices had on application at the Warehouse, or by letter pre-paid, inclosing postage stamp.—Warehouse closes at 7 o'clock.

TO ARCHITECTS, BUILDERS, &c.

REDUCED LIST OF PRICES.—R. HENLY and Co., WHOLESALE IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.

Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:—

3 ft.	3 ft. 3 in.	3 ft. 6 in.	3 ft. 9 in.	4 ft.
£3.	£3. 10s.	£3. 15s.	£4.	£4. 10s.

Henly's Patent Improved, with back Boiler and Wrought Iron Oven:—

3 ft.	3 ft. 3 in.	3 ft. 6 in.	3 ft. 9 in.	4 ft.
£5.	£5. 15s.	£6. 5s.	£6. 10s.	£7.

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do., at 3½d., and 4d. do.

Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.

Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

OLD-ESTABLISHED WHOLESALE IRONMONGERY WAREHOUSE, Kitchen-range, and Stove-grate Manufactory 18, Cross-street, Walworth.

JOHN GRICE most respectfully solicits the attention of Architects, Builders, and Carpenters, to his Stock of Black and Bright Stoves, Kitchen Ranges, &c., &c.

Black Registers, from 6d. per in. and upwards.

Bright ditto with Black and Bright Bars, 2l. 10s. and upwards.

Self-acting Kitchen Ranges, with Oven and Back Boiler, Wrought Bars, Fittings Bright:—

3 ft.	3 ft. 6 in.	4 ft.
2l. 18s.	3l. 7s.	3l. 15s.

Elliptic Stoves, 3d. per in.

All articles made on the premises and warranted, and delivered free of expense within five miles of London. Bell-hanging in superior style, hung in secret, 8s. per pull.

TO BUILDERS, CARPENTERS, &c.—The undermentioned are the PRESENT PRICES of IRONMONGERY, at YOUNG'S, 194, Oxford-street. Every other article equally low. Orders executed upon receipt of remittance or a respectable London reference.

	2	2½	3 Inches.	
Cast Butts.....	11s.	16s.	24s.	per gross.
Cut.....	4d.	6d.	10d.	20d. per
Clasp.....	6d.	8d.	1s. 4d.	1s. 10d. ∫ 1,000.

Nos.	3	4	5	6	
Patent Line	6s. 6d.	7s. 3d.	9s. 10d	12s.	per gross.

	2	2½	3 Inches.	
Rain Pipe	1s. 1d.	1s. 3d.	1s. 5d.	per yard.

BURBIDGE and HEALY, 130, FLEET-STREET, LONDON, beg respectfully to inform the Building Public that they fit up COOKING ARRANGEMENTS for large Mansions, with patent appliances on scientific principles, which ensure greater economy and efficiency than hitherto attained. Also HOT WATER APPARATUS, upon improved and scientific principles, which they recommend for its peculiar safety for the Warming of Mansions, &c.

They fit up Laundries with Hot Water Apparatus, for Drying in a cleanly, expeditious, and safe manner. They also fit up BATHS with elegant arrangements, with every modern scientific improvement. Also Apparatus for the plentiful supply of Hot Water for Baths and general use of Mansions and large establishments.

PIERCE'S ECONOMICAL RADIATING STOVE GRATES.—Families furnishing are solicited to examine the large and extensive assortment of Drawing-room and other GRATES, recently completed from the most recherche designs in the Louis Quatorze, Elizabethan, Gothic, and other styles, with FENDERS AND FIRE-IRONS en suite, always on show at the manufactory.

These Grates combine the decorative and useful, blending economy with comfort, and are guaranteed as a PERFECT CURE FOR SMOKY CHIMNEYS.

In BED-ROOMS and NURSERIES they are found invaluable, retaining the heat for many hours after the fire is out.

KITCHENS and LAUNDRIES fitted up in the most complete manner with Ranges, Ovens, Boilers, Hot-plates, Broiling-plates, Patent Smoke-jacks, &c., with the latest improvements.

HEATING by HOT-WATER, combining Warmth with Ventilation, on PIERCE'S improved method, adapted for every description of building, and so arranged as to warm the entire of a large mansion from one moderate fire.

PIERCE, 5, JERMYN-STREET, REGENT-STREET.

FIG. 1

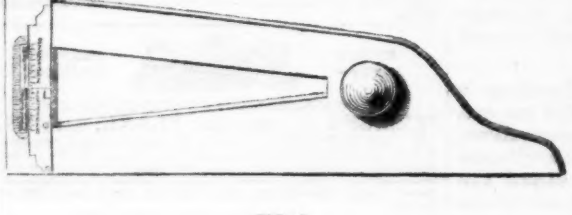


FIG. 2

BLUNDELL'S BUILDERS' SQUARE.

THIS is an instrument of very simple construction, and intended to supersede the Square and Plumb-bob used by builders and others; and also for the architect and surveyor to ascertain readily and correctly the angles of sloping lines, such as roofs, columns, gutters, &c.

It consists of a spirit-tube of peculiar form set in a frame having two straight sides, the one at right angles to the other, and an index affixed divided into degrees and half degrees.

Fig. 1 represents the square complete; it may be observed that the spirit-tube is imbedded, and no part left visible except a portion at the index.

Fig. 2 is a longitudinal section of the spirit-tube; the side EK is that against which the index is placed; the line AB is parallel to the bottom of the square, and intersects the index at the point marked "level." When this line is horizontal, the spirit in the tube remains at "level;" but when it is at an angle with the horizontal line, equal to AGC, the spirit remains at C, indicating the angle of deviation, the line CD then representing the surface of the spirit.

Consequently, if the lower side of the square be placed on any given surface, the spirit will shew immediately, and without any calculation, if it be truly level and if not, what the angle of slope is.

The chief advantages this instrument possesses over the Square and Plumb-bob are, that it is not rendered inaccurate by wind, and can be used in the open air in any weather, or about the works of unfinished buildings, &c., and that it is more accurate and more portable.

The accuracy is not affected by changes of temperature, which can be very easily proved.

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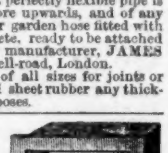

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